TELEFAX COVER SHEET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

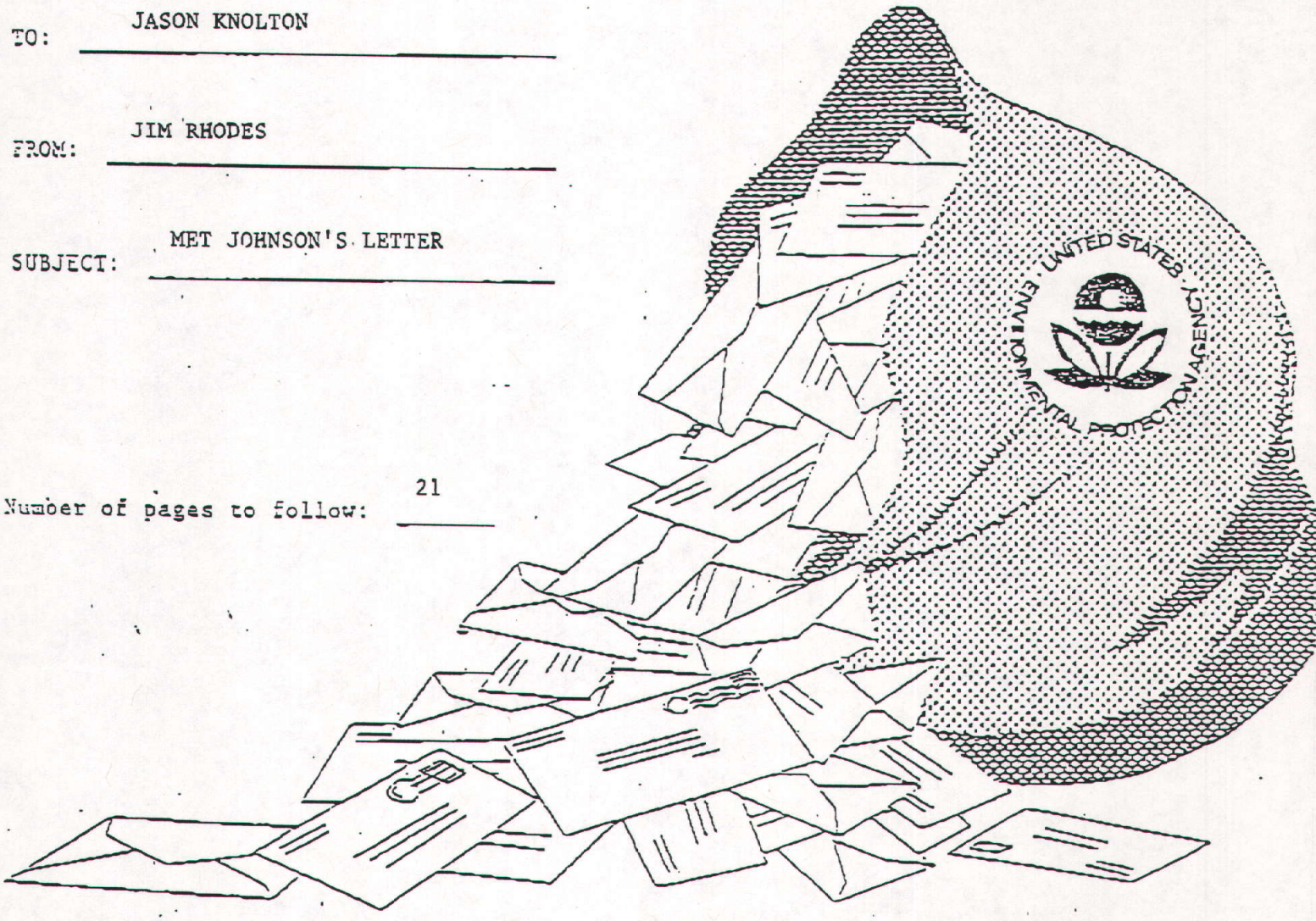
-- Emergency Response Branch --

TO: JASON KNOLTON

FROM: JIM RHODES

SUBJECT: MET JOHNSON'S LETTER

Number of pages to follow: 21



COMMENTS: JASON:

Attached are the documents purusant to our conversation of Wednesday, January 11, 1995.

JIM RHODES

Please call (303)_____ if you have any problems.

Our return fax number is (303) 294-7168. Thank you.

HOUSE OF REPRESENTATIVES
STATE OF UTAH

REP. MET JOHNSON
74TH DISTRICT
(WASHINGTON COUNTY)
P O BOX 600
NEW HARMONY, UTAH 84757
RES 586-4239

COMMITTEES: BUSINESS, LABOR AND ECONOMIC DEVELOPMENT; ENERGY, NATURAL RESOURCES AND AGRICULTURE; NATURAL RESOURCES AND ENERGY APPROPRIATIONS SUBCOMMITTEE

January 3, 1995

John R. Giedt, Chief
Emergency Response Branch
U. S. E. P. A., Region 8
999 18th Street, Ste. 500
Denver CO 80202-2466

Dear Mr. Giedt:

Just to bring some more light to the bureaucracy that is dysfunctional--I appreciated your letter mailed December 16th even though I disagree with the content and especially the bureaucratic arrogance with which you are dealing with the 5M Company. But then, I received this very same letter December 28th, yet dated December 16th; so consequently, I am in receipt of two (2) letters, some twelve days apart.

Instead of the inefficienies and/or duplication of efforts, I would appreciate your contacting the DEQ of Utah, along with 5M, to resolve this in a positive way, as the people involved in 5M are honorable and exemplary citizens of the southwestern part of the state of Utah. To have the federal government behave in such a manner is an insult to their integrity and to our area. Thanks again.

Sincerely,

Met

cc: 5M Corporation
Senator Bennett
Senator Hatch
Congressman Hansen

TELEFAX COVER SHEET

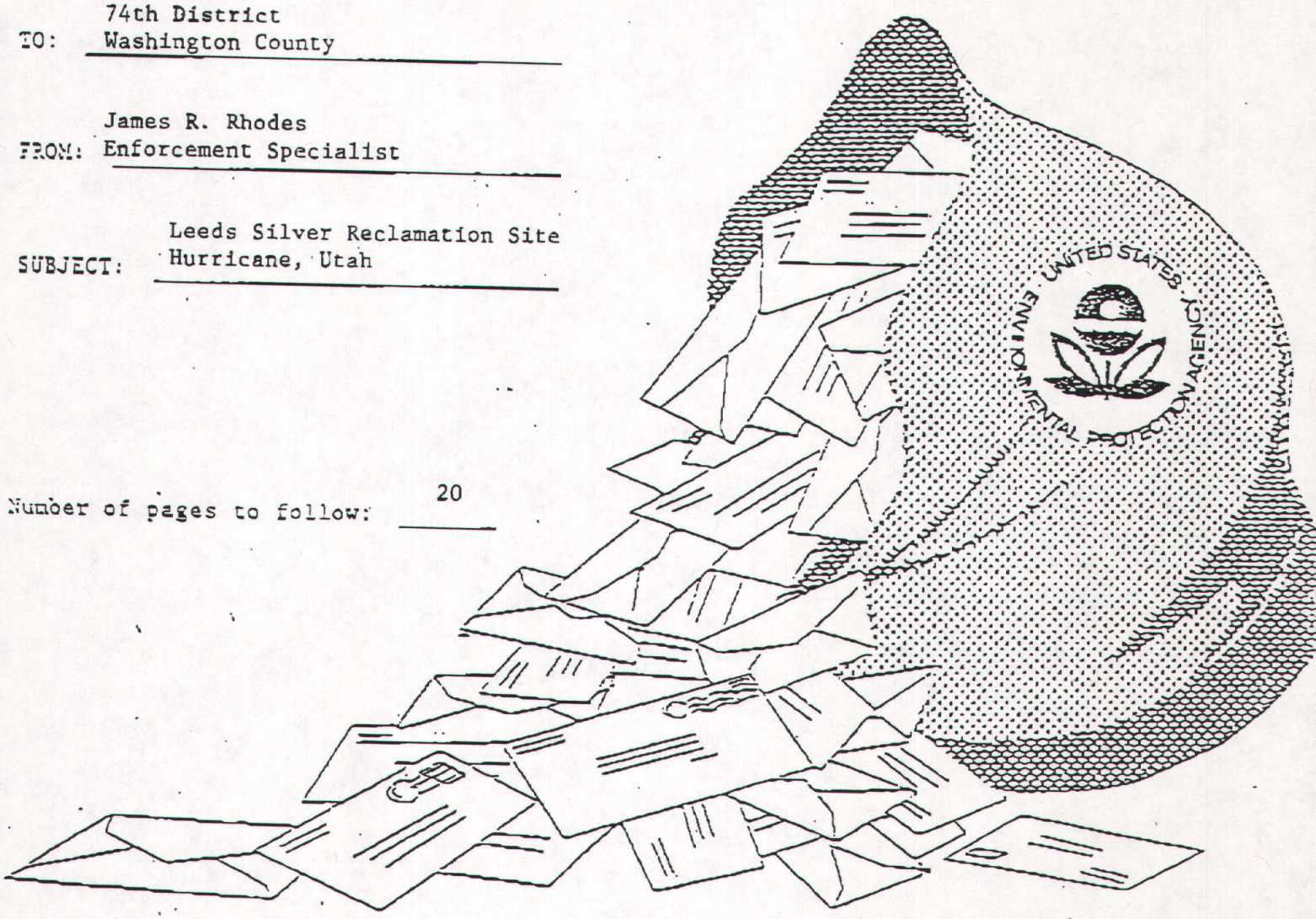
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

-- Emergency Response Branch --

TO: Rep Met Johnson
74th District
Washington County

FROM: James R. Rhodes
Enforcement Specialist

SUBJECT: Leeds Silver Reclamation Site
Hurricane, Utah



Number of pages to follow: 20

COMMENTS:

Dear Rep. Johnson:

Pursuant to our telephone conversation this morning, Wednesday, January 11, 1995, I have enclosed a copy of EPA's Action Memorandum dated December 7, 1994. Also, pursuant to your request, I have enclosed a copy of the State of Utah's general agreement with the EPA's approach for the Site cleanup. Please let me know if I can be of further assistance.

Sincerely,

James R. Rhodes

Please call (303) (303) 294-7040 if you have any problems.

Our return fax number is (303) 294-7162. Thank you.

State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Kent P. Gray
Director

168 North 1950 West
P.O. Box 144840
Salt Lake City, Utah 84114-4840
(801) 536-4100
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(801) 536-4414 T.D.D.

ERRC-463-94

October 19, 1994

Mr. Peter D. Stevenson
U.S. EPA, Region VIII
999 18th Street, Suite 500
Denver, Colorado 80202-2405

Re: Review of the "Preferred Plan Remediation Report" for the Leeds Silver Reclamation site.

Dear Mr. Stevenson:

Thank you for the opportunity to review the "Preferred Plan Remediation Report" for the Leeds Silver Reclamation site. Although the plan does not provide the level of detail needed for a thorough review of the proposed actions, the Utah Division of Environmental Response and Remediation (DERR) generally agrees with the approach for site cleanup outlined therein and in the corresponding cover letter.

The letter indicates that capping the heap-leach pile in place utilizing a geosynthetic liner was selected as the preferred cleanup option. The DERR has some concern over the permanence, or effective-life of this option. The plan also calls for a high-power wash of the asphalt. The DERR questions whether it would be feasible instead to remove the asphalt cover and place it in the heap-leach pile prior to capping.

Please forward to DERR any further plans or designs for this project as they become available. The DERR would like to maintain meaningful and substantial involvement in the cleanup activities at this site, however, budget constraints may preclude this. Continue to direct any correspondence or questions to Jason Knowlton at 536-4100.

Sincerely,

Brad T Johnson

Brad T Johnson, CERCLA Branch Manager
Division of Environmental Response and Remediation

BTJ/JK/ss

cc: Wayne Hedburg, Utah Division of Oil, Gas and Mining
Wayne Thomas, UDEQ District Engineer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

DEC 7 1994

Ref: 8HWM-ER

ACTION MEMORANDUM

SUBJECT: Request for a Time-Critical Removal Action at the Leeds Silver Reclamation Site, Leeds, Washington County, Utah.

FROM: Peter Stevenson, OSC
Emergency Response Branch

THRU: Cheryl A. Crisler, Chief
Response Section

John R. Giedt, Chief
Emergency Response Branch

TO: Robert L. Duprey, Director
Hazardous Waste Management Division

Site ID#: X8

Category of Removal: Time-Critical Removal Action

I. PURPOSE

The purpose of this ACTION MEMORANDUM is to request and document approval of the proposed Removal Action described herein for the Leeds Silver Reclamation Site (Site), located approximately one mile northwest of Leeds, in Washington County, Utah, within the Silver Reef Mining District (See Figure 1 - Attached).

This Removal Action will address the need to mitigate the threats to the local population and environment posed by 1) the contamination of the soil and surface water and potential contamination of the groundwater, which have resulted from ore-processing via an acid heap leach process for the extraction of copper and silver; 2) potential airborne migration of hazardous substances off-site; 3) corrosive waste in a steel tank adjacent to the Site; 4) transformers, which contain polychlorinated biphenyls (PCBs), within the area of the mill and in a warehouse on-site ; and 5) buried 5-gallon containers on-site which contain ignitable waste/flammable materials. Conditions existing at the Site present an imminent and substantial endangerment to human health and the environment and meet the criteria for initiating a

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Time-Critical Removal Action pursuant to 40 CFR, §300.415 (b)(2) of the National Contingency Plan (NCP). This Removal Action is expected to require less than 12 months and two million dollars for completion.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The CERCLIS ID number for the Site is UTD981550619. Site conditions are such that this Removal Action is classified as Time-Critical. This is the first Removal Action at this Site.

1. Physical location

The Leeds Silver Reclamation Site is located at the North 1/4 Corner of Section 12, Township 41 South, Range 14 West, Salt Lake Baseline and Meridian in Washington County, Utah (See Figure 1 - attached). Leeds, Utah, (population 254) is approximately one mile southeast of the Site along the east side of Interstate 15. The town of Silver Reef is located within one mile north of the Site, and the community of St. George is a few miles ~~north~~ south. The population of the area is expanding rapidly and recent developments within a few miles of the Site include a large Walmart distribution center. Numerous residences are located to the east and south of the Site within a four mile radius, and plans have been made for a housing development for 90 families about 1/3 mile south of the Site. Other developments are being planned or proposed, and the town of Silver Reef continues to expand rapidly.

The Site is located in a narrow, steep-walled valley formed by Buckeye Reef to the southeast and White Reef to the northwest. Surface elevations range from approximately 3,640 feet at the northern extent of the Site to approximately 3,520 feet at the southern extent.

The entire area, including the Site, contains historical structures from the late 1800s, including gravestones, old building foundations, and numerous adits. This Site is a popular tourist and recreational area. Old roads and footpaths crisscross the Site, and signs of public ingress/egress are evident. Motor cycle riding, horseback riding, four-wheel driving, and hiking occur on and near the Site on a daily basis. There is no fence or other structure that inhibits any type of public access to the Site.

2. Site characteristics

The main feature of the Site is a centrally located pile of crushed ore, underlain by an asphalt pad (See Figure 2 - attached). This pad covers an area of approximately 3.8 acres and, in conjunction with the ore, is referred to as a heap leach pad.

At the south end of the leach pad is a small collection pond (referred to as a pregnant pond), and south of this is an overflow pond. The overflow pond is situated slightly downgradient from the pregnant pond and was designed to intercept and contain excess solution, should the capacity of the pregnant pond be exceeded. These two ponds cover 0.9 acres, and both of these ponds are also underlain by an asphalt liner.

A canal, which diverts water from Leeds Creek, approximately 2 miles north of the Site, flows along Buckeye Reef and drains into the wetland immediately south of the overflow pond. Within the wetland, the canal is well-defined and is approximately 18 inches in width with a maximum depth of approximately 8 inches. In the northern portion of the wetland, the channel flows along the western levee and is situated somewhat higher in elevation than the basin floor. The canal exists in the southern end of the wetland and flows into a pond utilized for pasture, lawn and garden irrigation and for livestock watering. Depressional areas within the wetland contain standing water from at least 1991 to the present, and visible evidence indicates that the soils have been or are periodically saturated at the surface. Saturation appears to have resulted from subsurface lateral seepage from the canal, periodic overflow of the canal during storm events, and groundwater discharge. Surface runoff within the wetland flows in a southern direction and coalesces in the southwest corner, where it drains into a culvert that passes under the dirt road and ultimately into the California Mine shaft. Thereafter, the water reaches an extensive network of underground mines and possibly flows into bedrock aquifer.

North of the leach pad is a 1.3 acre ore stockpile and south of this stockpile, about half the distance to the leach pad, are three 72-gallon electrical transformers. Three electrical transformers are also present in the mill area which covers approximately 0.5 acres in the southwest corner of the Site. A warehouse and test area, associated with on-site operations, located approximately 1000 feet northeast of the processing area, also contains several transformers.

3. **Removal site evaluation**

The Site is an inoperative ore processing facility which utilized an acid heap leach process for the extraction of copper and silver. The Site is currently owned, and was operated, by 5M Incorporated of Hurricane, Utah. The asphalt leach pad and ponds were constructed around 1978 and the facility was in operation through 1983. Copper and silver sandstone ores from the Triassic Silver Reef member of the Chinle Formation were processed via acid heap leach operations. A network of perforated polyvinyl chloride pipe traverses the surface of the ore pile and was used to distribute an acidic solution across the surface of the pile. As the acid solution percolated through the pile, it leached metals from the ore. The metal-bearing (pregnant) solution flowed downslope along the pad and ultimately drained into the pregnant pond. The solution was pumped from the pond and copper, silver, and other metals were recovered.

As a result of concern by EPA, the Utah Department of Environmental Quality (UDEQ), and the Utah Department of Environmental Response and Remediation (UDERR), various sampling processes have been used to evaluate the potential contamination on the Site. Some examples and the results include:

a. The collection pond and overflow pond were analyzed for metals and show detectable concentrations for 10 constituents. These constituents include: Barium, 2.0 mg/L; Cadmium,1.06 mg/L; Iron, 180 mg/L; Manganese, 126 mg/L; Chloride, 975 mg/L; Sulfate, 220,000 mg/L; Copper, 222mg/L; Mercury, 0.374 mg/L; Silver, 8.8 mg/L; and Zinc, 109 mg/L.

b. X-ray fluorescence(XRF) spectrophotometer and soil screening results show that 1) high levels of metal contamination are in the sediment and soil on-site; 2) the wetland serves as a contaminant sink; 3) there is a high concentration (19 mg/kg) of mercury in the irrigation pond sediment relative to other ponds, which indicates that off-site migration is also occurring; 4) the pregnant and overflow ponds are characterized by low pH (2.2 and 3.4 pH units, respectively), high conductivity (203 and 45 mmhos/cm, respectively), and high salinity (203.4 and 29.2 ppt, respectively) [conductivity and salinity data, in conjunction with the abundant precipitates, indicate high concentrations of dissolved

materials are present in the water column]; and 5) the perched pond and Leeds Creek diversion exhibit elevated conductivity and salinity which suggests that some of the process waste may have been received by these areas.

c. On-site screening of the alpha radioactivity shows 3 of 7 locations in excess of the U.S. EPA Drinking Water Guideline of 15 picoCuries per liter (pCi/L). The radiochemical analysis shows 5 of the 7 locations to exceed the guidelines.

d. Transformers are situated within the mill area and a warehouse on-site. Laboratory analysis of a sample of transformer oil confirmed the presence of chlorinated compounds in the form of 230 mg/kg of Arclor 1260.

e. Numerous 5-gallon containers have been buried on-site. A field sample of the containers show a flash point of 40.5°C/105°F; and, therefore, it is an ignitable waste under the U.S. Code of Federal Regulations, CFR 40 Part 261.21.

f. Corrosive waste was also found in a rusted-out steel tank south of the Site.

g. Solid, aqueous, and elutriate phase toxicity evaluations, using sediment and water collected from the pregnant pond, the overflow pond, and the irrigation pond, indicate that both sediment and water in the pregnant and overflow ponds are acutely toxic. In the event the asphalt pad ruptures and sediment enters and mixes with downstream sources of water, such as Leeds Creek diversion and the irrigation pond, substantial damage is likely to occur to health/environment which is downgradient from the Site.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

As evidenced by the sampling analyses and Site evaluation which have been completed thus far, there are several concerns. These have already been briefly discussed in relation to the evaluation of the Site, but a summary of the hazardous substance, pollutant, or contaminant and its release/potential release into the environment follows:

a. The on-site material is the source of

contamination. The on-site sources consist of the ore stockpile, the leach pile, and the pregnant and overflow ponds. The presence of metals (especially arsenic, beryllium, and mercury) which have been found in the soil, surface waters, and subsurface waters is of concern, especially when considering long- and short-term exposure. Besides the potential for airborne migration off-site, there is a concern that the downstream ponds will be contaminated with trace metals - for example, mercury concentrations ranged from 0.15 to 2.1 mg/kg in the sediment of the two collection ponds and increased to 84 and 140 mg/kg, respectively, in the Leeds Creek diversion sediment and wetland sediment. These ponds serve as collection points for domestic, irrigation, and stock water. The wetland is already serving as a sink to the on-site source material, and the small reservoirs or wetland that receive surface water from the Site are becoming contaminated with trace metals, as evidenced by the sampling of contaminant gradient. Additionally, Quail Creek Reservoir lies only a short distance downstream. This reservoir is the culinary water supply for the City of St. George, and it could end up being a sink for trace metals from the Site if the other reservoirs or wetland are not significant enough to stop the runoff before it reaches the reservoir during major storm events.

b. Sampling results show that both sediment and water in the Site ponds are acutely toxic to the test organisms and likely toxic to the test organisms indigenous to the Site. The magnitude of the toxicity indicates that a release of the sediment and/or water from these ponds would result in contamination of the surface water used from wells, in lawn and garden irrigation, and for livestock, and also would result in significant ecological damage.

c. At least one of the transformers on-site was confirmed to contain PCB contaminated oil; the other transformers probably also contain PCBs.

d. The 5-gallon containers on-site contain material which has a flash point of 40.5°C/105°F and therefore is ignitible waste/flammable material.

e. The results of the radiological survey indicate that the ore material is a source of

elevated radiation levels. On-site background levels are in excess of the Nuclear Regulatory Guidelines for nonoccupational exposure and levels at and in the vicinity of the ore pile are above the local background. The survey results of the pregnant pond indicate that the pond water could pose a significant radiological contaminant source to the local water supply.

5. **NPL status**

This Site is not an NPL site.

6. **Maps, pictures, and other graphic representatives**

See Figures 1-3 - attached.

B. **Other Actions to Date**

1. **Previous actions**

The only other actions previously taken regarding this Site that have not already been discussed in this Action Memorandum are:

a. The U.S. Department of Interior Fish and Wildlife Service (USFWLS) conducted a field review of the Site on February 10, 1993, and expressed a concern regarding 1) surface movements of contaminants off-site, 2) the odor of selenium gas near the northern end of the leach pads, 3) uranium activity in the water, and 4) downstream ponds/wetland/reservoirs being contaminated by trace metals.

b. A request was made by UDERR to USFWLS for information on sensitive environments at the Site. USFWLS listed the following endangered and threatened species as potentially adversely influenced at this Site:

1) Virgin River Chub
2) Woundfin Minnow
3) Desert Tortoise
4) Peregrine Falcon
5) Relict Leopard Frog
6) Virgin Thistle.

2. **Current actions**

There are no other actions being taken or proposed that are not discussed in this Action Memorandum.

C. State and Local Authorities' Roles

1. State and local actions to date

UDEQ and UDERR have taken water samples on the Site; the Utah Bureau of Solid and Hazardous Waste has expressed a concern about the potential for contamination of soils, ground water, and surface water at the Site. Throughout the investigations, EPA and the State have discussed the concerns about the Site.

The Utah Division of Oil and Gas Mining (UDOGM) has regulated activities at the Site since 1987.

The Utah Drinking Water Program and the Hidden Valley Water Users Association have collected data and communicated with the owners of the Site regarding compliance with appropriate drinking water standards. Of special concern is the potential contamination of the public well and potential off-site migration of radionuclides.

2. Potential for continued State/local response

The State and local constituents will continue to be involved in the investigation/assessment of the Site and will be kept apprised if there are Removal actions.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions at the Site present an imminent and substantial endangerment to human health and the environment, and meet the criteria for initiating a Removal Action under 40 CFR Section 300.415 (b)(2) of the NCP. The following factors from § 300.415 (b)(2) of the NCP form the basis for EPA's determination of the threat present and the appropriate action to be taken:

(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

(v). Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

(vi) Threat of fire or explosion;

(vii) The availability of other appropriate federal or state response mechanisms to respond to the release; and,

(viii) Other situations or factors that may pose threats to public health or welfare or the environment (i.e. elevated radiation levels which pose a problem on-site and a potential contaminant to the local water supply.)

A. Threats to Public Health or Welfare

A significant potential for continued human/animal exposure to hazardous substances exists. This is evidenced by: 1) direct access and trespassing on the areas of the Site where hazardous substances exist, 2) airborne migration of hazardous substances from the Site, 3) migration of contamination/hazardous substances from the Site into the regional groundwater, and 4) migration of contaminants and/or hazardous substances off-site to ponds, wetlands, wells, and other surface water which is used for domestic purposes, lawn and garden irrigation, and livestock water.

As previously mentioned, the Site is not secure from trespassers. Residential properties are located near the Site, and it is also a popular tourist and recreational area. There is evidence of motorcycle riding, horseback riding, 4-wheel driving, and bicycling on a daily basis at the Site.

The semi-arid climate of the Leeds area is characterized by mild winters and hot summers. This provides a situation for the hazardous substances and/or contaminants on-site to be airborne and migrate off-site during the dry, windy days. However, significant precipitation occurs during the latter part of the summer, and torrential thunderstorms, accompanied by strong winds, often occur at the Site. Therfore, a major water event could result in off-site migration of hazardous substances and/or contaminants via downgradient surface waters.

The most significant run-off of hazardous substances and contaminants comes from the leach pad and is ponded in the acidic water pond and overflow pond at the south end of the Site. EPA toxicologists have reviewed the sample results of this extremely acidic water (lowest recorded

pH=2.2, a RCRA-characteristic hazardous waste) and determined that it may pose an acute health risk to children or other individuals trespassing on the Site. Water with hydrogen ion concentrations this high may cause skin irritation or burns and may cause persistent or permanent damage to the eyes if contact were to occur. Additionally, the acidic pH in the pond is likely to solubilize heavy metals in the sediment and carry them to the ground water. Thus the pond serves as a recharge area for heavy metals into the ground water. The Site is also a potential source of downgradient surface-water contamination which could flow into the pasture, lawn, and garden irrigation water, livestock water, and wells which are used for drinking water (See Figure 3 - attached).

PCBs are present in the transformers on-site. PCBs are very persistent in the natural environment and are readily bioaccumulated. In humans, exposure to PCBs has been associated with chloracne, impairment of liver function, a variety of neurobehavioral symptoms, menstrual disorders, minor birth abnormalities, and an increased incidence of cancer.

The buried on-site5-gallon containers are accessible to the public and contain materials which are highly ignitible/flammable.

Direct contact with the highly corrosive waste in the rusted steel tank on the south side of the Site could be expected to cause irritation of skin, mucous membranes, eyes and throat. Contact with the corrosive waste could cause severe or permanent tissue damage, particularly since the corrosive waste will react with moisture in the mucous membranes to produce heat and attack living tissue. Since access to the steel tank is unrestricted, any trespasser may come in direct contact with this corrosive material.

B. <u>Threats to the Environment</u>

Wildlife in adjacent habitats may be exposed to on-site contamination either through direct contact with contaminated soil, standing water, and sediments, or indirectly through consumption of organisms (algae, aquatic insects, or animals) feeding in the area. Acidic pH in the ponds poses a significant threat to wildlife in the area, and acidic runoff from the ponds may enter downstream wetland during storm events, causing severe ecological stress in these areas.

Investigation by EPA, ERT, REAC, and TAT via small mammal trapping shows a diverse community of small mammals present in the area of the Site and concludes that the

surrounding area is of significant ecological value. Additionally this investigation found that the sediment and water in the on-site ponds were acutely toxic to the test organisms and likely toxic to aquatic organisms indigenous to the Site.

PCB was found on-site and experimental animals exposed to PCBs experienced an increased incidence of cancer, reproductive problems, neurobehavioral degradation, pathological changes in the liver, stomach, skin, and other organs, and suppression of the immunological function. PCBs are bioaccumulated and can be biomagnified. Their toxicity increases, therefore, with length of exposure and position of the exposed species on the food chain. Three primary ways in which PCBs can affect terrestrial wildlife are outright mortality, adversely affecting reproduction, and changing behavior.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants and contaminants from this Site, if not addressed by implementing the response action described in this ACTION MEMORANDUM, present potential imminent and substantial endangerment to public health, or welfare and the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

Pregnant Pond

Evaporate and/or remove the water, line the area, and utilize it for tailings' stockpile.

Holding Pond

Dewater by treatment and discharge; remove sediment; excavate and transport contaminated soil to the pregnant pond stockpile area. Asphalt and breach the dike.

Heap Leach/Drainage

Grade stockpiled materials to a crest in middle and approximate grade of 3% on both sides. Trench on east and west side with a slope of 3%, leading to the holding pond. Fill trench with a layer of sand, a

perforated pipe, and gravel. Drain via trench/pipe into the holding pond area.

Cap/Cover Heap Leach & Pregnant Pond Stockpile

Grade and compact stockpile area to post-settled slope of 3%. Cap with geosynthetic membrane, filter layer, geomembrane/geonet layer, and topsoil. Plant grass.

Transformer, Ignitable Waste, and Corrosive Material

PCB transformers and contaminated concrete and debris in the warehouse will be removed and disposed of pursuant to the Toxic Substances Control Act.

Buried 5-gallon cans of ignitable waste will be excavated, overpacked, and disposed of at a Subtitle C facility.

Corrosive material in the tank to the south of the Site will be drummed and disposed of at a Subtitle C facility.

Tanks containing process residue will be emptied and rinsed. The contents will be treated by evaporation or solidification. Solids will then be incorporated into the heap for capping. Rinsate will be treated and discharged.

2. Contribution to remedial performance

The Removal Action described herein will remediate the Site; and, therefore, no Remedial Action, including preparation of an HRS Scoring Package will be necessary.

3. Description of alternative technologies

N/A

4. EE/CA

The Removal Action proposed in this Action Memorandum is Time-Critical and an EE/CA is not required.

5. Applicable or relevant and appropriate requirements (ARARs)

This Removal Action will attain to the extent practicable, considering the exigencies of the situation, applicable or relevant and appropriate

requirements of federal environmental or more stringent state environmental laws. Because this action is being conducted as a Time-Critical Action all Federal and State ARARs have not been identified at this time, but the following is a partial list of ARARs for this removal action:

FEDERAL

a. National Historic Preservation Act (16 USC Section 470; 40 CFR Section 6.301 (b); and 36 CFR Part 800).
b. Endangered Species Act of 1973 (16 USC Section 1531; 40 CFR Subpart C, Section 6.302 (h); and 50 CFR Part 402).
c. Clean Water Act (33 USC Sections 1341 and 1344).
d. Clean Water Act (40 CFR Part 230).
e. Executive Order 11988 (Floodplain Management, 1977), (40 CFR Subpart C, Sec. 6.302 (b)).
f. Executive Order 11990 (Wetlands Protection), (40 CFR Subpart C, Sec 6.302 (a)).
g. Fish and Wildlife Coordination Act (16 USC Section 662); (40 CFR Subpart C, 6.302 (e)).
h. Occupational Safety and Health Act of 1970 (29 USC Section 651) The Health & Safety Standards for Employees Engaged in Hazardous Waste Operations, (50 FR 45654).
i. Resource Conservation and Recovery Act (RCRA), Subtitle C (capping and placement requirements are relevant and appropriate), and Subtitle D (solid waste disposal requirements are applicable).
j. DOT Hazardous Material Transportation Regulations (49 CFR Parts 107, 171-177).
k. Toxic Substances Control Act ((40 CFR Parts 129, 750, and 761).

STATE

a. Utah Safe Drinking Water Act (19-4-101 ET SEC UCA; R449, UAC).
b. Utah Groundwater Protection Rules (R448-6 UAC).
c. Utah Water Pollution Control Act (19-5-101 ET SEC UCA; R448-2 UAC, R448-8 UAC).
d. Utah Air Conservation Act (19-2-101 ET SEC UCA; R446-1 UAC).
e. Utah Occupational Safety and Health Act (35-9-1 UCA; R500 UAC, Subpart 126, Subpart 216, Subpart 102).
f. Utah Wildlife Protection Act (23-15-6 UCA).
g. Utah Channel Diversions (23-15-5 UCA).
h. Utah Water Regulations (73-3-29 UCA).

6. Project Schedule

Activity	Date of Completion
Cap Design	12/15/94
Treatability Study (Holding Pond and Pregnant Pond Water)	12/5/94
Water Treatment, PCB Cleanup, Ignitable Waste Cleanup, and Corrosive Waste Cleanup.	1/3/95
Capping etc.	2/15/95
Disposal of PCBs etc.	2/30/95

B. Estimated Costs

Cost Estimate: A table containing cost estimates for the Removal project ceiling is shown below:

EXTRAMURAL COSTS:

Mobilization/Prep-Work	$ 50,000
Ponds	20,000
Heap Leach/Drainage	32,000
Topsoil, Shape Heap Leach, and Cover	207,000
Seeding	74,500
Disposal (PCBs, Ignitibles, etc.)	60,000
20% Contingency	89,500
TOTAL EXTRAMURAL COSTS	$ 533,000

INTRAMURAL COSTS:

Intramural Direct Costs	15,000
Intramural Indirect Costs	31,000
TOTAL INTRAMURAL COSTS	$ 46,000
TOTAL REMOVAL PROJECT CEILING	$ 579,000

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed or no action will increase public health risks and threats to the environment in several ways. Delay will allow continued release of contaminants/trace metals into the ponds and wetland with a potential for effect of the surface water as far downgradient as the City of St. George if a major storm event were to occur on-site. The acidic nature of the water on-site poses an acute health risk to children or other individuals trespassing on the Site. The acidic pH in the ponds is likely to solubilize heavy metals in the sediment and carry them to the ground water. Acidic pH will continue to effect the wild life in the area, and additional acidic runoff may enter downstream wetlands or water storage bodies during storm events - thus causing additional contamination of the domestic, irrigation, and stock water. During dry, windy days the hazardous substances and contaminants on-site will continue to be airborne and migrate off-site into nearby acreages, residences and/or wetlands. Because of the ignitibility of the materials in the 5-gallon containers on-site, there is a potential for fire or explosion which could create airborne contaminants, migrating from the Site. Lastly, PCB, corrosive materials in the rusted steel tank, and elevated radiation levels present on-site are a potential risk to trespassers and for migration off-site.

VII. OUTSTANDING POLICY ISSUES

UDOGM has retained bond monies from 5M, Inc. Coordination with them for contribution toward the Removal Action could help to reduce the costs.

VIII. ENFORCEMENT

Information relating to EPA's enforcement strategy is included in Attachment A to this Action Memorandum, which is Enforcement Confidential. The enforcement strategy is not part of the Action Memorandum for purposes of NCP consistency.

IX. RECOMMENDATION

This decision document represents the selected Removal Action for the Leeds Silver Reclamation Site in Washington County, Utah, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP §300.415(b)(2) criteria for a Removal and I recommend your approval to document the Emergency Removal Action Emergency Removal Action. The total project ceiling is estimated to be $579,000, and of this, an estimated $533,000 comes from the Regional removal allowance.

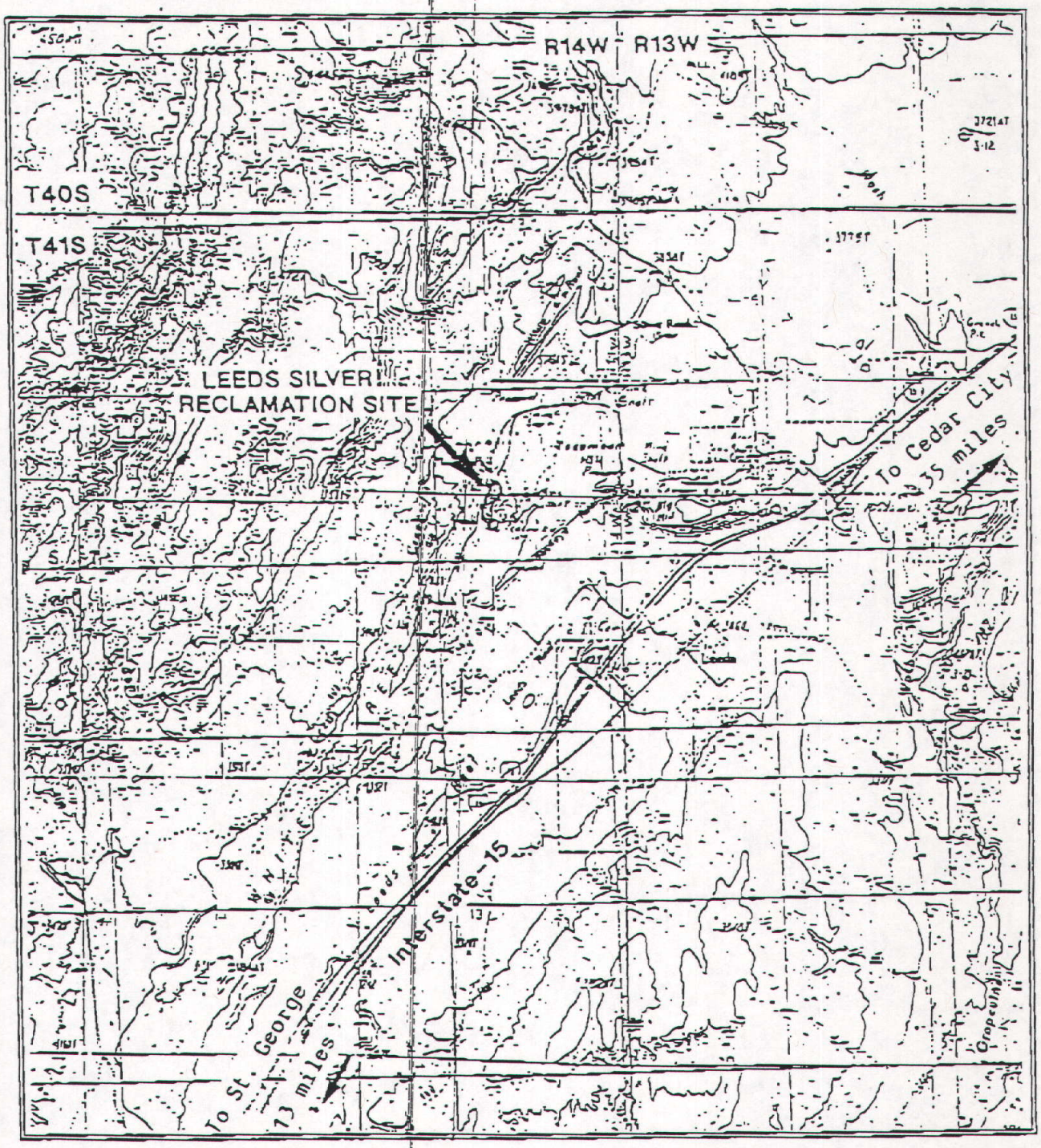
Original Signed By
Robert L. Duprey

Approve: _____ Date: DEC 7 1994
Robert L. Duprey, Director
Hazardous Waste Management Division

Disapprove: _____ Date: _____
Robert L. Duprey, Director
Hazardous Waste Management Division

Attachments:

Figures 1-2	Site Maps
Figure 3	Potential Downgradient Water Diversion
Attachment A	Enforcement



NORTH

UTAH DEPARTMENT OF HEALTH

BUREAU OF ENVIRONMENTAL RESPONSE AND REMEDIATION

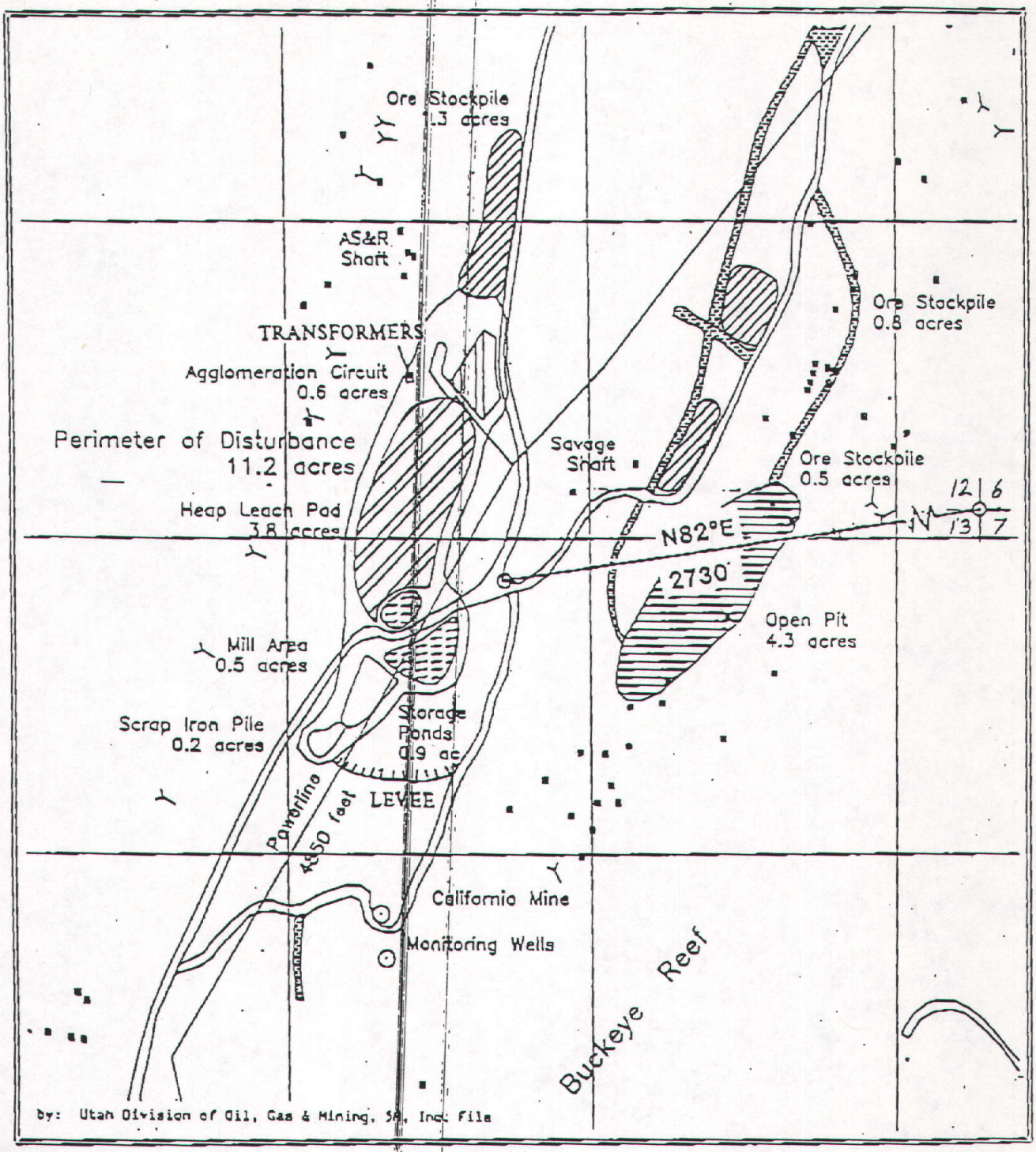
Figure 1

SITE LOCATION

Leeds Silver Reclamation Site
Washington County, Utah

Scale
approx. 1:36,000

Figure 2



NORTH

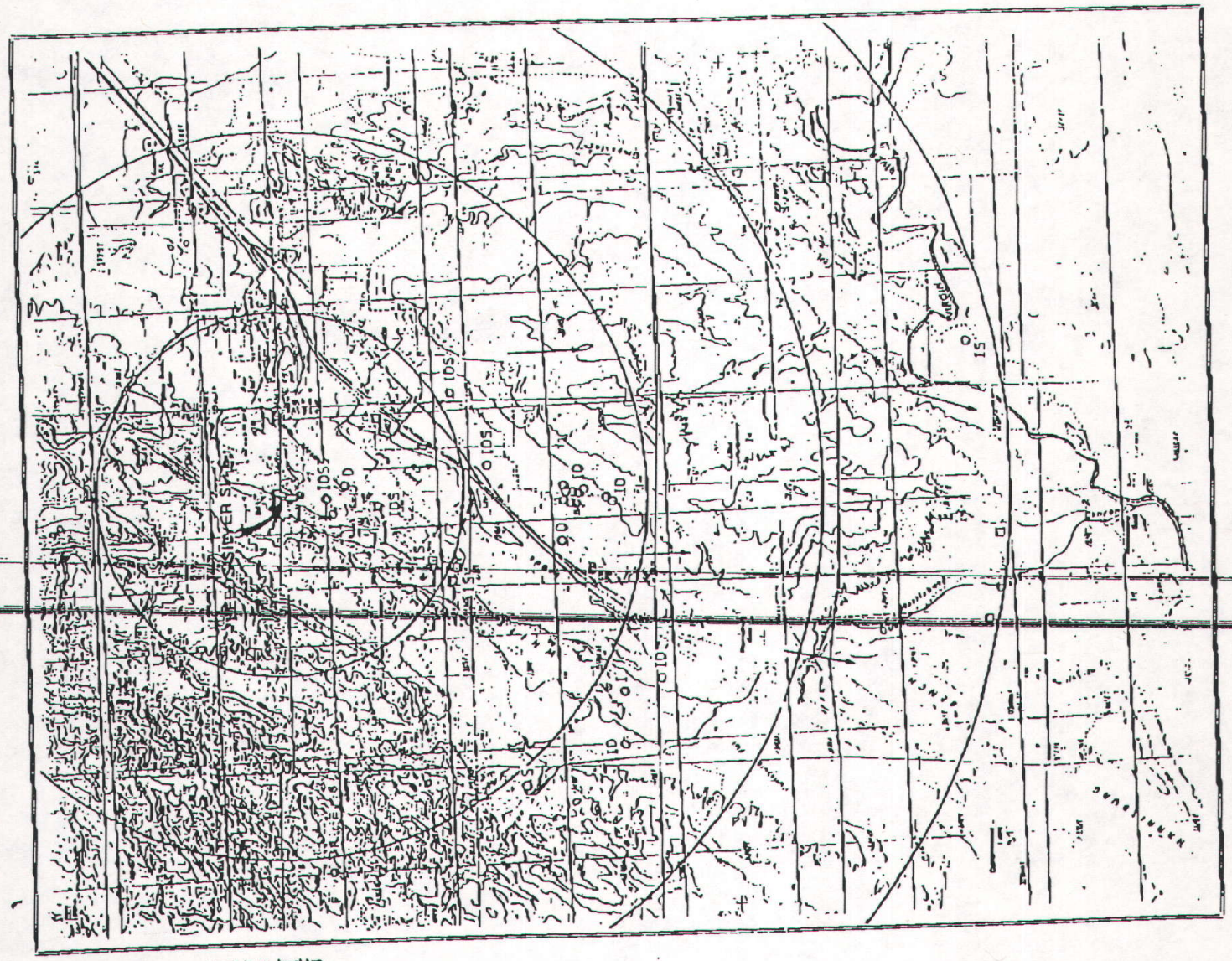
UTAH DEPT. OF HEALTH
Bureau of Solid and Hazardous Waste

DETAILED SITE LOCATION

LEEDS SILVER RECLAMATION SITE
WASHINGTON COUNTY, UTAH

SCALE
1:6000

Figure 3



EXPLANATION

O : Underground Water Well

□ : Spring

Use Categories

D = domestic

I = Irrigation

S = Stock Water

Arrows indicate expected ground water flow direction

Large circles indicate 1, 2, 3 and 4 mile radii from site.

UTAH DEPT. OF HEALTH
Bureau of Solid and Hazardous Waste

Potentially Downgradient Ground Water Points of Diversion

LEEDS SILVER RECLAMATION SITE
WASHINGTON COUNTY, UTAH

SCALE
approx 1:36,000

USGS topo maps. Hurricane, Harrisburg Junction, Signal Peak, and Pintura Quads. 1.5 min. series