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ELECTRIC OPERATIONS GROUP

September 10, 1990

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DIVISION OF
OIL, GAS & MINING

Copy to Pam,
Tom, SUSAN
file ACT/015/018
#2

Mr. Don A. Ostler, PE
Executive Secretary
Utah Water Pollution Control Committee
State of Utah
Department of Health
288 North 1460 West
PO Box 16690
Salt Lake City, Utah 84116-0690

RE: PROPOSED DISCHARGE TO DEER CREEK (EMERY COUNTY)

Dear Mr. Ostler:

Provided herein is our response to the six (6) questions raised in your letter dated August 30, 1990. Your questions have been re-stated and our response follows.

1. What are the agency positions of the Division of Wildlife Resources (DWR) and the Forest Service regarding your plans on discharging water in Meetinghouse or Deer Creek Canyons. We need written comments on positions from DWR and the Forest Service, concerning this matter.

Response: Written comments have been requested and will be forwarded to your office by the US Forest Service and Utah Division of Wildlife Resources. We have been in contact with both agencies to respond as soon as possible. Of particular note, our permitting activities are solely focused on Deer Creek Canyon at this time. Meetinghouse comments will follow at a later time, after a study has been completed within Meetinghouse.

2. Can UP&L control the amount of water discharged into Deer Creek? If so, how will the water be released to Deer Creek (at what flows or variation of flows)? Can the flow be controlled to coincide with naturally high flows as a result of stormwater or snow-melt runoff?

Response: The flow can be controlled to achieve the incremental or staged discharge to reduce the daily sediment

loading into Huntington Creek. However, high run-off due to storm events occurs very rapidly, to the point that the event would normally peak and have passed prior to the mines ability to react by reducing discharge flow. Where possible, the discharge will be reduced during periods of high flow (spring run-off), see Response #5.

3. What mitigation means will UP&L take to minimize sediment transport in Deer Creek during first flush or other critical times.

Response: Mitigation will consist of gradually increasing the discharge over a period of one month. Analysis indicates that there are no effective locations to place sediment control structures in the stream and the amount of sediment which will be moved from Deer Creek is small and substantially less than those loads currently in Huntington Creek. Therefore, we feel the best mitigation would be to vary the flows in a step release manner. This would effectively minimize the change in concentration in both Deer Creek and Huntington Creek during and after the initial sediment flush.

To accomplish this it is our recommendation that we begin the initial discharge at 5 to 7 cfs for a period of 3 days and then increase the flow in increments of 1 cfs per 3 day interval to a maximum of 22 cfs.

During this time, samples will be taken at the four (4) stations along Deer Creek and at the two (2) stations on Huntington Creek above and below the confluence with Deer Creek, see Figure 1.

4. What are UP&L plans for monitoring water quality in Deer Creek and Huntington Creek during the initial discharge and afterwards?

Response: UP&L will monitor the discharge at the locations shown on Figure 1 and in accordance with the monitoring schedule shown on Table 1 & 2. This schedule will concentrate monitoring during the initial discharge phase and then will be reduced to coincide with our normal surface water monitoring schedules that have been established in our Hydrologic Monitoring Program.

Another phase of this monitoring plan will be to collect quantitative macroinvertebrate samples above and below the Deer Creek confluence before, during, and

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after the flow releases from Deer Creek. These biological samples will integrate the potential effects of the discharge water.

A summary of these investigations will be submitted to the agencies.

5. What measures will UP&L take to mitigate any possible damages in Huntington Creek during the first flush or at other critical times?

Response: As mentioned in response to question 3, mitigation measures will consist of initiating the discharge gradually beginning at 5 to 7 cfs which will be the initial sediment flush and then incrementally stepping the increase as proposed.

There will be small amounts of sediment discharge in the initial flush. However, to mitigate the effect of these sediments, discharge should occur under the low ambient TSS conditions expected in October and November which follows the usually high TSS period which occurs in September.

In the event of abnormally intense precipitation for a period longer than 48 hours and where Deer Creek experiences excessive erosive action during these critical high flow periods, UP&L will make every attempt, where feasible and practical to reduce its discharge volume until such time as the run-off subsides and it can be resumed.

6. Has UP&L surveyed the fishery in Huntington Creek or obtained data from DWR regarding the fishery in Huntington Creek before any discharge has occurred? Has it plans to do so after discharge?

Response: The fishery in Huntington Creek has been surveyed by the DWR (Utah). This information will be provided when available.

Because of the advantages of macroinvertebrates, it is proposed that a biological monitoring tool (baseline to post-project), that macroinvertebrates be quantitatively measured above and below the Deer Creek confluence, before, during and after sediment discharge until impact have been identified. Table 1 & 2 describes the locations, parameters, and frequency.

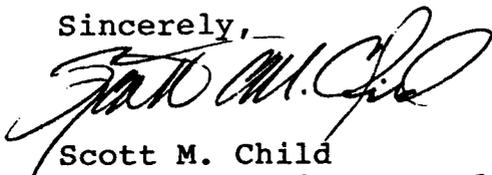
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Submitted herewith are 3 copies each of a Technical Addendum prepared by Ecosystems Research Institute addressing the TSS concentrations in Huntington Creek.

Installation of pipe is currently taking place within the mine to convey the water to the portal. The construction and installation of 330' of 18" pipe from the portal to the storm bypass culvert must be in place to accommodate the discharge as proposed. The Division of Oil, Gas and Mining has approved this subject to the Health Department approving the discharge. To implement construction of this pipe, it will be necessary for us to provide DOGM a copy of the bypass approval. It was our understanding that upon receipt of our response the Bureau could issue the bypass approval. We anticipate commencing construction of said pipeline as soon as possible. Your attention to this matter is appreciated.

If you have any further questions, please feel free to contact myself at 220-4612 or Mr. Val Payne at 687-9821.

Sincerely,



Scott M. Child
Senior Compliance Land Status Analyst

SC/do
Enclosure

cc: Pam Grubaugh-Littig, DOGM w/o enclosure
Miles Moretti, Utah DWR w/o enclosure
Ira Hatch, US Forest Service - Price District w/o enclosure
David Ariotti, SE District Health Dept. w/o enclosure
Mark Page, State Engineer, Price Utah w/o enclosure

DW Jense, UP&L w/o enclosure
Val Payne, UP&L w/o enclosure
Bart Hyita, UP&L w/o enclosure
RC Fry, UP&L w/o enclosure
Denise Dragoo, Fabian & Clendenin w/o enclosure
Vince Lamarra, ERI w/o enclosure

FIGURE 1. Location Map for the sampling sites.

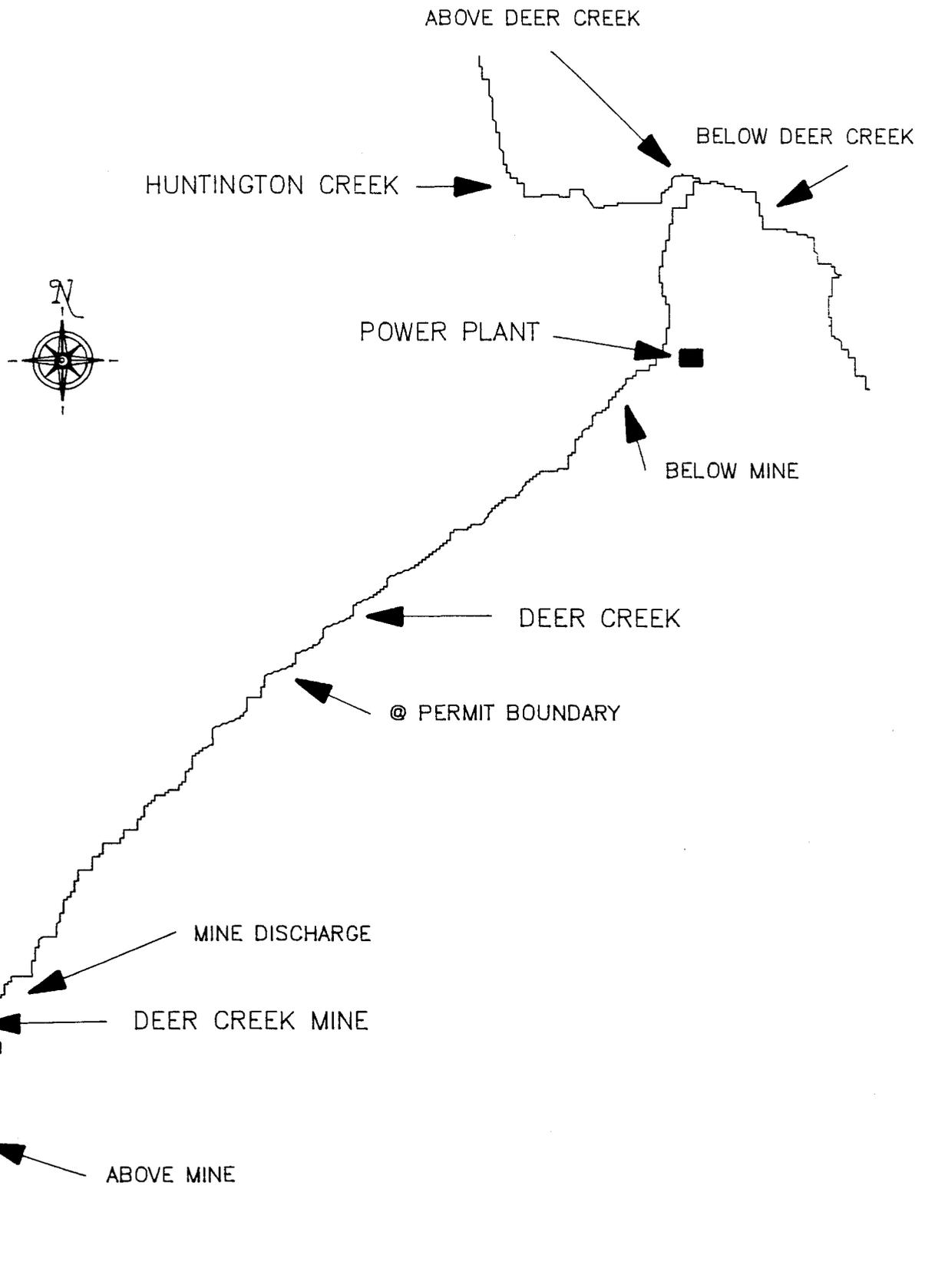


TABLE 1

DEER CREEK MONITORING SCHEDULE

LOCATION, PARAMETERS, AND FREQUENCY OF THE MONITORING FOR
THE PROPOSED DEER CREEK DISCHARGE TO DEER CREEK

<u>LOCATION</u>	<u>PARAMETERS</u>	<u>FREQUENCY</u>
DEER CREEK/HUNTINGTON CREEKS WATER QUALITY MONITORING		
PHASE 1		
Deer Creek - Above Mine Deer Creek - Mine Discharge Deer Creek - @ Permit Boundary Deer Creek - Below Mine Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek	Operational Parameters (See Table 2)	1 per day/7 day period
PHASE 2		
Deer Creek - Above Mine Deer Creek - Mine Discharge Deer Creek - @ Permit Boundary Deer Creek - Below Mine Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek	Operational Parameters (See Table 2)	1 per week/6 week period
PHASE 3		
Deer Creek - Above Mine Deer Creek - Mine Discharge Deer Creek - @ Permit Boundary Deer Creek - Below Mine Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek	Operational Parameters (See Table 2)	1 per month - Field Parameters 1 per quarter - Operational Parameters
HUNTINGTON MACROINVERTEBRATE MONITORING		
PHASE 1		
Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek		Prior to discharge, 7 days after discharge
PHASE 2		
Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek		30 days after initial discharge
PHASE 3		
Huntington Creek - Above Deer Creek Huntington Creek - Below Deer Creek		Quarterly for one year

TABLE 2

SURFACE WATER, DEER CREEK MINE DISCHARGE
 BASELINE AND OPERATIONAL WATER QUALITY PARAMETER LIST

FIELD MEASUREMENTS:

- * - Water Levels or Flow
- * - pH
- * - Specific Conductivity (umhos/cm)
- * - Temperature (degrees Centigrade)
- * - Dissolved Oxygen (ppm) [perennial streams only]

LABORATORY MEASUREMENTS: (mg/l) [Major, minor ions and trace elements are to be analyzed in total and dissolved forms.]

- * - Total Dissolved Solids
- * - Total Settleable Solids
- * - Total Suspended Solids
- * - Total Hardness (as CaCO₃)
- * - Acidity (CaCO₃)
- * - Alkalinity - Total
- Aluminum (Al)
- Arsenic (As)
- Barium (Ba)
- Boron (B)
- * - Carbonate (CO₃⁻²)
- * - Bicarbonate (HCO₃⁻)
- Cadmium (Cd)
- * - Calcium (Ca)
- * - Chloride (Cl⁻)
- Chromium (Cr)
- * - Conductivity
- Copper (Cu)
- * - Dissolved Oxygen
- Fluoride (F⁻)
- * - Iron (Fe) - Total and Dissolved
- Lead (Pb)
- * - Magnesium (Mg)
- * - Total Manganese (Mn)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Nitrogen: Ammonia (HN₃)
- Nitrate (NO₂)
- Nitrite (NO₃)
- * - Oil and Grease
- * - pH
- * - Potassium (K)
- Phosphate (PO₄⁻³)
- Selenium (Se)
- * - Sodium (Na)
- * - Sulfate (SO₄⁻²)
- Sulfide (S⁻)
- * - Turbidity
- Zinc (Zn)
- * - Cation-Anion Balance

Sampling Period:

- Baseline
- * Operational, Postmining

Sampling Locations:

- | | |
|-------------------|---|
| Deer Creek | 1) Above Mine
2) Mine Discharge
3) @ Permit Boundary
4) Below Mine |
| Huntington Canyon | 1) Above Deer Creek Confluence
2) Below Deer Creek Confluence |