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VIA FEDERAL EXPRESS

December 14, 1993

ADMINISTRATIVE RECORD

Mr. Larry Reed, Director
Hazardous Site Evaluation Division
(ATTN: NPL Staff)
Office of Emergency and Remedial Response (OS-230)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

RE: United Park City Mines Company's Comments Concerning the Final Report, Richardson Flat Tailings, Summit County, Utah, TDD #T08-9204-015 and #T08-9210-050, Submitted to USEPA, Region VIII, Waste Management Division, on February 19, 1993, by Ecology and Environment, Inc., TAT

Dear Mr. Reed:

United Park City Mines Company ("United Park") hereby submits its Comments concerning the Final Report, Richardson Flat Tailings, Summit County, Utah, TDD #T08-9204-015 and #T08-9210-050, which was prepared for Mike Zimmerman, On-Scene Coordinator, Waste Management Division, Region VIII, U.S. Environmental Protection Agency ("EPA"), by Scott Keen, Ecology and Environment, Inc., Technical Assistance Team, and submitted to EPA on February 19, 1993 ("the Final Report"). A copy of the Final Report was mailed to United Park from Mike Zimmerman, OSC, Emergency Response Branch, Region VIII, EPA, under a transmittal letter dated July 1, 1993.

United Park requests that its Comments as contained in this letter become a part of and be included in the Administrative Record in the Matter of the Proposed Listing of the Richardson Flat Tailings, Summit County, Utah, on the National Priorities List for Uncontrolled Hazardous Waste Sites, Proposed Rule No. 12.

The Final Report states that its purpose is to summarize the work performed by Ecology and Environment, Inc., the Technical Assistance Team ("TAT"), to examine the site in terms of immediate threats to human health or the environment. (Final Report at 1.)

The Final Report concludes that "[i]n general, the site presents little or no immediate threat to human health or the environment." (Final Report at 2.) However, along with this conclusion, the Final Report attempts to set forth a number of "serious environmental concerns" which are not based upon any substantiated evidence, but upon unsubstantiated conjecture or incorrect assumptions. The Final Report contains several speculations and hypotheses that are presented as facts and conclusions.

As set forth more fully below in Part I of these Comments, United Park submits that an impartial scientific evaluation of available site information yields none of the "serious environmental concerns" presented in the Final Report. The independent environmental consultants Pioneer Technical Services, Inc., Butte, Montana ("PTS"), have prepared an independent scientific analysis of the data and conclusions utilized in the Final Report. The comments prepared by PTS concerning the Final Report are attached hereto and incorporated herein as Exhibit "A." The technical statements, interpretations, and conclusions made by United Park in Part I of these Comments are supported by the Comments prepared by PTS and attached hereto as Exhibit "A."

Part II of United Park's Comments sets forth the legal basis for United Park's request that EPA provide United Park with adequate notice and a reasonable opportunity to comment upon any use EPA makes of any material from the Final Report (or its supporting investigations, samplings, and analyses) in deriving or supporting an HRS score for the Richardson Flat site or in otherwise determining NPL listing for the site. Such notice and opportunity for comment must occur before EPA's finalizing its listing decision for the site so as to give EPA an opportunity to incorporate United Park's comments into EPA's rulemaking process.

I. AN IMPARTIAL, SCIENTIFIC EVALUATION OF SITE INFORMATION YIELDS NONE OF THE CONCERNS PRESENTED IN THE FINAL REPORT.

A. Air Monitoring: There Is No Release of Heavy Metal Contaminated Particulate Matter from Richardson Flat.

On page 4 under "Air Monitoring," the Final Report admits that air monitoring activities on June 10 and 11, 1992, "showed no detectable levels of cadmium, lead, or arsenic in any samples" and that only trace levels of zinc, at the limit of quantitation for the analytical method, were detected in four samples. The Final Report further states that "[n]o samples on any day under any wind condition exhibited elevated levels of contaminants." (Final Report at 4.) Nevertheless, the Final Report states, on page 3, that

"[p]otential airborne releases of metals documented by this and other studies are problems which have existed for many years."

United Park submits that the Final Air Sampling and Analysis Report, dated September 8, 1992, for the air sampling conducted at Richardson Flat on June 10 and 11, 1992, as summarized in the Final Report, states that "[t]he results indicate no release of heavy metal contaminated particulate matter from Richardson Flats." (Final Air Sampling and Analysis Report at 1, Executive Summary.) It should also be noted that the EPA was not restricted from access to the Richardson Flat site during the air monitoring activities, as stated in the Final Report. Indeed, United Park offered to provide EPA with a written Consent to Access to the site for these air monitoring activities; however, EPA representatives stated that site access was not necessary because the air monitoring would be conducted off the actual site and EPA declined United Park's offer of a Consent to Access for the site. See Affidavit of Edwin L. Osika, Jr., attached hereto as Exhibit "B" and incorporated herein by reference.

EPA's 1986 air monitoring at the site was flawed in a number of ways as documented in United Park's Comments, dated April 6, 1992, in Opposition to EPA's Proposed Rule to List the Richardson Flat Tailings on the National Priorities List ("United Park's Comments to EPA dated April 6, 1992") at pages 38-40. EPA subsequently conducted the new air monitoring investigation in June 1992 in order to correct the inaccuracies in the prior air monitoring. Likewise, as acknowledged in the Final Report, the site conditions have been significantly altered since the 1986 air samples were collected. The surface of the Richardson Flat Tailings site has been almost entirely covered with topsoil in order to prevent both windblown tailings and direct contact by trespassers. The capping of the tailings with clean topsoil has eliminated the risk of exposure to tailings materials via the air pathway. Consequently, there is no factual basis for the Final Report's characterization on page 3 of "potential airborne releases of metals documented by this and other studies" at the site. Indeed, the June 10-11, 1992 air monitoring investigation at the site showed no airborne releases of metals from the site. Consequently, the Final Report has no factual basis upon which to base its speculation, on page 3, concerning "potential airborne releases of metals," and such unfounded speculation is not relevant to the purpose or scope of this Final Report.

B. The Clean Topsoil Covering the Tailings Provides a Permanent Means of Dust Suppression at the Site.

The Final Report acknowledges that United Park has covered the tailings with clean topsoil in order to suppress any dusty conditions at the site. The soil samples, summarized in the Final Report, show that the soil cover is within the normal ranges for all elements within the soil and that the soil cover does not contain contaminants at concentrations that would pose a threat to human health or the environment. (Final Report at 5.) However, the Final Report does express concern that the "salt grass" may "slowly disappear" on the site and that some of the cover soils are thin (less than six inches thick) in some locations on the site.

Neither of these concerns are well-founded. Natural grass (EPA has designated it "salt grass") has been growing at the Richardson Flat site for more than twenty years. During the last five years, the area experienced one of the most severe drought events of recent history. The salt grass does not appear to have been stressed during this drought period and certainly did not disappear. The salt grass appeared to thrive because it grows on the surface of the tailings impoundment, which is designed as a closed basin, so that precipitation that falls in the basin does not run off. Consequently, even in the very dry weather, the salt grass continued to grow. Since the 1992 soil sampling, United Park has covered almost all of the salt grass with an average of one and one-half feet of topsoil. This topsoil will be seeded in the spring of 1994. Likewise, United Park is in the process of covering those areas of the site where soil cover is "thin" with additional topsoil and will then seed the topsoil with native foliage so that no areas of sparse cover will remain at the site. See Exhibit "B."

It is important to note that Figure 1, attached to the Final Report and prepared by the TAT in August 1992, does not depict an accurate representation of current soil cover conditions at the Richardson Flat site. What is identified in Figure 1 as the "Uncapped" area has now been capped. Also, the area to the east of the area identified in Figure 1 as "Uncapped" (this eastern area of the tailings impoundment is the area identified by EPA as having been covered with salt grass) has now been covered with clean topsoil, with the exception of about ten acres which will be covered in the spring of 1994.

C. The Tailings Impoundment Is a Stable, Competent Containment Structure.

The Final Report acknowledges that "[t]here is no immediate threat of gross failure of the tailings containment structure." (Final Report at 2.) However, the Final Report includes various unfounded speculations as to potential problems of the containment structure in the future. These unfounded speculations are addressed below.

1. Main Embankment

The Final Report acknowledges that no cracking is evident on the embankment and no bending or bulging was noted on the embankment. The Final Report also states that a 35 to 50% grass cover on most of the embankment helps in erosion control. (Final Report at 6.) However, the Final Report expresses concerns that the main embankment is oversteep and that six inches of fine, dry sand under a three-inch topsoil cover in certain areas on the face of the embankment could erode quickly if it were exposed.

While the embankment appears fairly steep, no structural problems have been identified in the embankment. The sand is located near the surface of the embankment and, therefore, has no bearing on the integrity of the structure of the embankment. Furthermore, the tailings containment structure was constructed to the requirements of, and under an approved construction permit from, the Utah Water Pollution Committee, Bureau of Environmental Health, Utah Division of Health, pursuant to the May 29, 1974 Construction Permit, a copy of which is attached as Exhibit "C" to United Park's Comments to EPA dated April 6, 1992.

2. Toe of the Main Embankment

The Final Report speculates that there is seepage under the dam because of the wet conditions in the marshy area near the base of the tailings dam. (Final Report at 6.) However, the Final Report does not provide any scientific evidence which indicates that the source of the water in the marshy area is from the tailings dam. Indeed, the Final Report ignores three other significant sources of water in the area which cause or contribute to the observed "wet soils" in the marshy area near the base of the tailings dam.

First of all, it is important to note that the marshy area near the base of the tailings dam has always been a wetland area, long before the tailings dam was constructed. This wetland area has always been fed by Silver Creek and, subsequently, also by runoff from the highway. Silver Creek has significantly higher discharge during various parts of

the year, other than the August 4, 1992 date of the TAT dam inspection, and these flood periods on Silver Creek affect bank storage and the flooding of the marsh area. Likewise, surface runoff from the highway ditch and both surface runoff and groundwater discharge from the hillside drainage area from the highway cut to the north, discharge into the marshy area. Finally, the large pond to the south provides significant hydraulic head to cause seeps in the marshy area on both sides of the diversion ditch. EPA has ignored these evident and plausible sources of water to the marshy area and, instead, has speculated that the wet soils are "probably due to seepage under the dam." (Final Report at 6.) EPA has no evidence to support this pure speculation.

3. The North Abutment

The Final Report notes a "swampy, loamy area on the north abutment, adjacent to where the embankment meets the abutment" and that the "north monitoring well . . . recharged quickly when bailed." From these conditions, EPA speculates that the water in the swampy area on the north abutment has its source from water seeping "around or through the contact between the abutment and the embankment." (Final Report at 6.) Again, EPA has no evidence for this speculation and has ignored the more plausible sources of the water in the swampy area on the north abutment.

The conditions observed in the swampy ground near the north monitoring well, both surface water and groundwater flow, are most likely due to the effects of the highway drainage system (both surface runoff and groundwater discharge) and the drainage basin to the north of the highway, not to any seepage from the dam. In addition, there is a seep emerging from the highway in the same area which has been created by the road cut. A portion of this seep is piped from under the highway and is discharged immediately to the north of the highway, with the balance of the seep emerging south of the highway in the swampy ground near the north abutment and the north monitoring well. See Exhibit "B." As explained in Section I.C.2. above, this area has always been a wetland area and the north monitoring well has always recharged rapidly. This area is continually receiving surface water runoff from the highway and groundwater discharges from the drainage basin north of the highway. The wet area is not caused by the tailings dam and does not affect the integrity of the dam.

4. Crest of the Main Embankment

The Final Report acknowledges that the crest of the main embankment is sloped back towards the tailings area so that any water will drain back into the tailings area. However, the Final Report notes that "small erosional gullies are forming on the crest." (Final Report at 6.) United Park personnel regularly review the crest and face of the dam and any erosion caused by snow melt is checked and corrected on an annual basis. See Exhibit "B." Therefore, any "small erosional gullies" are corrected before they develop into erosion problems.

5. Water Flow

Because of the swampy ground and the recharge rate of the monitoring well on the north abutment, EPA surmises that water flow from "some source" is occurring in the area. "Without further investigation," EPA "assumes" that the source of the water must be water behind the tailings dam that is seeping through the abutment/embankment contact. (Final Report at 7.) EPA has no scientific evidence to support its assumption and has not acknowledged the more plausible explanations for the source of this water.

As explained in Section I.C.2. above, the area near the base of the tailings dam has always been a wetland area, long before the construction of the tailings dam. This wetland area is fed by Silver Creek, particularly during flood stages, and it is fed by the highway drainage system (both surface runoff and groundwater discharge). For example, a seep emerging in the highway in the same area appears to have been caused by the road cut for the highway. A portion of this seep is piped from under the highway area with the balance of the subsurface flow emerging in the wetland area south of the highway. See Exhibit "B." Evidently, the TAT personnel at the August 4, 1992 inspection of the dam did not see or note this seep in the road cut north of the abutment. Nevertheless, this seep does exist and can be viewed. These readily apparent sources of water for the marshy areas must be addressed by EPA before any assumption can be made as to the source of the water for the wetland areas.

6. Perimeter Dike

The Final Report acknowledges that the perimeter dike appears to be in good condition. (Final Report at 7.)

7. Diversion Ditch

The Final Report acknowledges United Park's work in flattening the ditch banks and adding topsoil to the banks of the diversion ditch. However, the Final Report expresses concern that the hillside diversion ditch, on the north perimeter of the tailings impoundment, had, at least temporarily, been cut off from the main diversion ditch as a result of topsoil stripping.

It is important to note that United Park completed its work during the summer of 1992 to flatten the banks of the diversion ditch and add topsoil to the banks of the diversion ditch. The hillside diversion ditch was removed during topsoil stripping, but United Park is now reestablishing the hillside diversion ditch along with the seeding and revegetation of the affected areas. See Exhibit "B."

8. Conclusions

The concerns expressed in the Final Report concerning the tailings containment are unfounded. The water sources for the historic wetland area near the toe of the tailings dam include Silver Creek, particularly at flood stages, the large pond south of the wetland area, and both the surface runoff and underground discharge from the highway north of the tailings containment. The wet soils in the area of the north abutment and the north monitoring well are caused by the effects of the highway drainage system (both surface runoff and groundwater discharge), and the drainage basin to the north. Finally, the hillside diversion ditch located on the north perimeter of the tailings area was only temporarily cut off from the main drainage ditch by topsoil stripping activities, and this hillside diversion ditch is now being reestablished along with the seeding and revegetation of the affected areas. As acknowledged in the Final Report, the tailings containment structure is in sound and stable condition.

D. The Final Report Does Not Document a Release to Surface Water.

The Final Report attaches a great deal of significance to one very questionable lead concentration reported for one surface water sample collected in Silver Creek (RF-SW-05) by the TAT in August, 1992. The following are several serious problems with this specific data point which cast doubt upon its validity:

1. United Park received split samples from each of the Silver Creek locations that the TAT sampled. In the case of sample RF-SW-05,

United Park's analytical result for lead in this sample was 29.6 μg/L, not even close to the 151 J μg/L reported by EPA. This discrepancy between split samples is even more evident when reviewed with the adjacent samples.

2. The lead data reported by EPA are very erratic, fluctuating by half an order of magnitude within three sample stations. To illustrate how out-of-line this one EPA lead analysis (RF-SW-05) is, lead concentrations (in μg/L) from EPA's and United Park's split samples are compared below for Silver Creek surface water samples at and adjacent to RF-SW-05:

Sample Number	United Park Pb Data	EPA Pb Data
RF-SW-04	25.0	36.4 J
RF-SW-05	29.6	151 J
RF-SW-06	34.4	33.2 J

Except for sample RF-SW-05, the Pb concentrations in the splits are comparable. The anomalous EPA lead concentration at RF-SW-05 is not repeated or even elevated in the sample collected farther downstream (RF-SW-06). Additionally, other metals measured by EPA (Zn, Cu, As, Ag, etc.) do not exhibit a similar fluctuating pattern; they exhibit steady or slightly decaying concentrations proceeding from upstream (RF-SW-01) to downstream (RF-SW-06) in Silver Creek. The fact that only lead is elevated in only the one sample, makes that single measurement unbelievable. This extreme variance in EPA's lead concentrations can only be an aberration of the laboratory.

3. All the EPA lead concentration data (as well as most of the other metals) from the EPA CLP have been qualified with the "J" flag, meaning that the value is an estimated concentration because "quality control criteria were not met" (Final Report, Table 9). Also, no field QA/QC samples (duplicate and rinsate blank samples) were presented with these surface water data.

The single, anomalous reported EPA lead concentration (RF-SW-05) is not substantiated in the split sample analysis and has no correlation with other metals concentrations. Likewise, this lead concentration is flagged with a "J," meaning EPA's contract laboratory acknowledges quality control problems encountered in the analysis. Consequently, this single sample value constitutes an aberration and should be discarded by EPA.

Certainly, EPA cannot rely upon this single, aberrant value to prove an "observed release" from surface water. See Kent County, Delaware Levy Court v. U.S.E.P.A., 963 F.2d 391 (D.C. Cir. 1992). EPA must support its finding of an "observed release" upon substantial, reliable evidence; otherwise, EPA's finding is an arbitrary and capricious action. National Gypsum Co. v. U.S.E.P.A., 968 F.2d 40, 44 (D.C. Cir. 1992). In this instance, EPA's "151 J" lead value is unsupported by lab analysis of the split sample, is not in correlation with the other metals values, and is unsupported by quality control data from the EPA contract laboratory. This aberrant value cannot support the conclusion of an "observed release" to surface water.

E. The Tailings Impoundment Is Not the Source of Any Increase in TDS in Groundwater.

In the Final Report, none of the metals concentrations measured by EPA indicate any problem when comparing upgradient with downgradient groundwater samples (Final Report, Table 6.) However, the TAT calculates a TDS concentration (there is no indication of how TAT made the calculation) and then arbitrarily assumes that the increase in TDS is due to the tailings impoundment. The following significant contributing factors affecting TDS are completely ignored by the TAT:

1. The effect of suspended sediment on TDS is considerable, so the significant difference between upgradient and downgradient suspended sediment concentrations must be considered for both the total and dissolved fractions when attributing any increase. From the information presented in the Final Report, it appears that EPA's contract laboratory did not report TSS or TDS. The TDS alluded to (no actual value is given) in the Final Report appears to have been calculated by the TAT.

2. The wells were sampled differently; the upgradient well was pumped with a peristaltic pump which minimized suspended sediment, while the downgradient wells were sampled with bailers which caused

considerable suspended sediment to appear in the samples. In its comparison of groundwater samples from monitoring wells, EPA cannot ignore the fact that the downgradient samples contained turbid water, while the background, upgradient sample did not. See Kent County, Delaware Levy Court v. U.S.E.P.A., 963 F.2d 391, 398 (D.C. Cir. 1992). In failing to take samples by the same technique from each well, EPA arbitrarily affected the results and, therefore, such sampling is invalid.

3. The two downgradient wells were completed beneath marshy areas and in a different geologic setting than the upgradient well. Because of the geochemistry of organic matter in marshes, one would expect a higher TDS in groundwater affected by significant organic materials. Comparing groundwater in a marsh with groundwater which is one-half mile away, on high ground, and in different geology, is not appropriate.

The increase in the calculated TDS is primarily due to increases in Calcium (6.4x), Magnesium (5.8x), and Sodium (2.5x). The source of these common rock-forming elements may be due to the influence of the marsh or the local geology; however, EPA does not address or acknowledge these plausible sources. Instead, EPA assumes that the increase in TDS is directly attributable to the tailings at the Richardson Flat tailings impoundment. Such an assumption is not supported by scientific evidence and ignores other sources of the TDS increase. Consequently, this conclusion cannot be assumed by EPA, and such conclusion is arbitrary and capricious. See Tex Tin Corp. v. U.S.E.P.A., 992 F.2d 353 (D.C. Cir. 1993) (EPA cannot assume the source of a contaminant -- particularly when there are other plausible sources).

Furthermore, TAT misstates and misinterprets the Utah Administrative Rules for Ground Water Quality Protection, U.A.C. R317-6 (1993) ("the Utah Ground Water Rules"), when it states that the increase in calculated TDS "constitutes a violation of state regulations pertaining to the protection of groundwater quality." (Final Report at 10.) This groundwater has not been classified by the Utah Water Quality Board, pursuant to U.A.C. R317-6-5. The TAT has no legal authority (nor the information and capability) to classify this groundwater as "either Class IA or Class III groundwater" (Final Report at 10), as TAT attempts to do. Protection of unclassified groundwater areas is determined by the existing groundwater quality. U.A.C. R317-6-4.8. Existing groundwater quality in this area includes whatever TDS is produced by the influences of the marsh and the local geology in the area.

Indeed, even if this portion of the groundwater were to be classified by the Utah Water Quality Board in the future, the Board would be obligated to classify it according to the existing quality of the groundwater and various parts of the aquifer could be classified differently. U.A.C. R317-6-5. In other words, the groundwater would be included within a classification for groundwater with the TDS level of this groundwater.

It is unlikely that TAT calculated the TDS level pursuant to U.A.C. R317-6-1.30. However, even if the calculation was made pursuant to the Utah Ground Water Rules, the calculated TDS level is not a violation of the Utah Ground Water Rules because the groundwater is unclassified and, if it were to be classified, it would be classified according to its existing quality, including its existing TDS level.

F. Upstream Areas of Silver Creek (Silver Maple Claims and Prospector Square) Are the Sources of Metals in the Wetlands Sediment.

The Final Report compares metal concentrations detected in wetlands sediments to background soil concentrations in the western United States, as reported in a USGS paper. (Final Report at 10 and Table 7.) While this USGS reference is an excellent baseline for comparing metal concentrations in soil, it is entirely inappropriate for comparison to wetlands sediments. These wetlands sediments are deposited in slow-moving environments and generally contain significantly higher concentrations of metals for two primary reasons. First, finer-grained sediment collects in this low energy depositional environment and that fine-grained material contains significantly higher adsorption capacity for metals. Second, wetlands sediment contains a large amount of organic matter which has an even greater tendency to adsorb and complex metals, thereby concentrating them into those sediments. It is, therefore, inappropriate to compare metals concentrations in wetlands sediments to background soils. No background wetlands sediment sample was collected to compare these sediment concentrations; a background sample would have eliminated the fine-grained and organic-rich variables from the equation, thereby allowing a reasonable assessment to be made.

The Final Report's attribution of the metals found in the wetlands sediment to tailings from the Richardson Flats tailings impoundment is also unsupported. As documented in several previous sampling exercises (see United Park's Comments to EPA dated April 6, 1992), the Silver Creek floodplain sediments are contaminated with metals from upstream sources, including the Silver Maple Claims and Prospector Square. It is more likely that the metals found in the wetlands sediment are also from these upstream sources, rather than from Richardson Flat.

The TAT attempts to address source identification by using one concentration ratio (Cadmium) to "prove" that the metals in the wetlands originate from the tailings impoundment and not from upstream sources. (Final Report at 10.) Also, the TAT uses only one of the dozen tailings samples collected by EPA to calculate these ratios. Using only cadmium ratios and only one tailings sample is another unscientific use of selected data to prove a specific conclusion. Average cadmium concentrations in the floodplain sediments (183 mg/Kg) are roughly 2.7 times higher than cadmium concentrations in the tailings impoundment (67 mg/Kg), using all previously collected EPA sample data. Cd concentrations in the tailings impoundment are also comparable to the average Cd concentration in the wetlands sediment (65 mg/Kg). Selectively using only Cd concentrations against which to compare other metals, creates a false interpretation of data in order to support TAT's predetermined conclusion: namely, that the tailings impoundment is the source of the metals in the wetlands sediment.

Using arsenic in exactly the same unscientific manner produces the opposite conclusion. Average arsenic concentrations in the tailings impoundment (876 mg/Kg) are roughly four times higher than arsenic concentrations in the floodplain sediments (217 mg/Kg), using all previously collected EPA sample data. Arsenic concentrations in the floodplain sediments are also comparable to the average arsenic concentration in the wetlands sediment (203 mg/Kg). Using only arsenic concentrations against which to compare other metals, leads to the opposite conclusion: the floodplain sediments are the source of the metals in the wetlands sediment.

The point of the prior discussion is that using carefully selected concentration ratios that represent some fundamental chemical difference in the sources could have assisted in the identification of a source. However, the method was improperly and disingenuously applied by TAT to reach a preconceived conclusion that is not scientifically defensible.

Using hydrologic evidence, it is most likely that the sediments present in the wetlands were derived from upstream sources in Silver Creek, not from the diversion ditch as speculated by TAT. Silver Creek averages 3.3 cfs throughout the year; the diversion ditch transports an average of 0.06 cfs during a portion of the year. Silver Creek has 55 times the discharge of the diversion ditch, and is clearly responsible for most, if not all, the sediment deposited in the wetlands area and within its entire floodplain. Hence, the source of the metals in the wetlands sediment is the same as for the historic floodplain sediments found all along Silver Creek, from Prospector Square to the wetlands area. This hypothesis is supported by a comparison of averaged sediment data previously collected by EPA from Silver Creek and the wetlands (see table below). This comparison clearly indicates that

average As, Cd, Cu, Pb, Hg, Ag, and Zn concentrations in Silver Creek sediment are very similar to those in the wetlands sediment.

	As	Cd	Cu	Pb	Hg	Ag	Zn
Wetlands Sediment	203	65	396	4662	4.1	21	10532
Silver Creek Sediment	291	60	426	6076	3.0	27	11312

Averaged EPA sediment concentrations (1989 & 1992) in mg/Kg.

The Final Report's attribution of the metals in the wetlands sediment is, therefore, completely unfounded speculation. The arbitrary use of concentration ratios has no basis and is scientifically indefensible. Several, more compelling, lines of reason point to upstream sources in Silver Creek as the origin of metals found in the wetlands.

Indeed, in a July 20, 1990 Memorandum from Susan Kennedy, E&E FIT, to Gregory Oberley, EPA NPL Coordinator (a copy of which is attached to United Park's Comments to EPA, dated April 6, 1992, as Exhibit "B"), Ms. Kennedy states that Dr. Werner Raab of MITRE Corporation believes upstream areas of Silver Creek (Silver Maple Claims and Prospector Square) are the sources of metals contamination in the wetlands area:

> In a telephone conversation with Werner Raab of MITRE Corporation (7/16/90), Werner indicated to me he is not convinced, based on current data, that contamination detected in RFT-SW-6 and RFT-SW-7 is attributable to Richardson Flat Tailings. His contention is based on the potential for upstream contamination in Silver Creek to wash into the marsh during flood events. For this reason, I have not included in the documentation record any measurements provided by the State which are based on the assumption that RFT-SW-6 and RFT-SW-7 are contaminated due to Richardson Flat Tailings.

EPA still has no substantial evidence upon which to base its assumption that metals found in the wetlands sediment are attributable to the Richardson Flat tailings

impoundment. EPA cannot base its conclusion upon unsupported assumptions or inferences. See National Gypsum Co. v. U.S.E.P.A., 968 F.2d 40, 41-45 (D.C. Cir. 1992). Such a conclusion is arbitrary and capricious. Id. Furthermore, EPA cannot assume the source of a contaminant -- particularly, when there are other plausible sources for the contaminant. See Tex Tin Corp. v. U.S.E.P.A., 992 F.2d 353 (D.C. Cir. 1993). Consequently, EPA cannot attribute the metals in the wetland sediments to the Richardson Flat tailings impoundment on the basis of the data in the Final Report.

G. Groundwater Samples From the Landfill Area Are Invalid Due to EPA's Differing Sampling Techniques.

The Final Report acknowledges that groundwater in the area of the municipal/sanitary landfill showed no organic contaminants that could be attributed to the landfill. (Final Report at 12.) However, the Final Report states that increases in TDS and arsenic concentrations are attributable to the landfill site. (Final Report at 3, 11.) The Final Report attempts to support this attribution by a comparison of the background sample, RF-MW-01, with the two downgradient sample locations, RF-MW-02 and RF-MW-03.[1/] However, because the TAT used entirely different sampling techniques at the upgradient, background well and the two downgradient wells, the analytical data is not comparable. The upgradient well was purged and sampled with a peristaltic pump and was slightly cloudy. The downgradient wells were purged and sampled with a bailer, and the water was nearly opaque red-brown with suspended sediment. During development, all three wells had the same dark red, silty water evacuated from them. These two very different sampling techniques resulted in the upgradient sample being only slightly cloudy, while the downgradient samples were opaque dark red, full of suspended sediment (originating from the formation due to poor completion of the wells).

The effects of using a different sampling technique on the upgradient well from the sampling technique used on the downgradient wells include: those organic and

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1/ It should be noted that monitoring wells RF-MW-02 and RF-MW-03 are incorrectly characterized as being outside of the sanitary/municipal landfill on Figure 1, attached to the Final Report and prepared by the TAT in August 1992. Actually, as proven by the landfill materials (e.g., diapers, waste paper products, plastic bags, burnt wood, concrete, etc.) drilled out of these wells, both of these monitoring wells are located within the sanitary/municipal landfill area used by Park City Municipal Corporation. See Exhibit "B."

inorganic compounds that preferentially adsorb to mineral surfaces will be amplified in samples with high sediment content (RF-GW-2 and RF-GW-3), as opposed to low sediment samples (RF-GW-1); and the natural compositions of the sediment material include several metals which will obviously be elevated in the unfiltered sample since the sediment had ample time to dissolve in the acidified (HNO_3) water.

There would be less of a problem if the same sampling procedures were followed at all three of the wells and the same highly turbid sample had been collected at all three locations. However, only the downgradient wells were sampled in a manner that caused them to be extremely turbid. Therefore, when the analytical data from the downgradient turbid samples are compared to that from the upgradient non-turbid sample, the differences in concentrations cannot readily be attributed to the landfill; any differences may be attributed to the effects of the different sample turbidity (and, hence, the sampling procedure). The TDS and arsenic increases are attributable to the significant suspended sediment in the downgradient wells, rather than to the landfill, since almost all of the metals concentrations in those downgradient samples are also significantly higher.

In its comparison of groundwater samples from monitoring wells, EPA cannot ignore the fact that the downgradient samples contained turbid water, while the upgradient sample did not. See Kent County, Delaware Levy Court v. U.S.E.P.A., 963 F.2d 391, 398 (D.C. Cir. 1992). In failing to use the same sampling procedures for the upgradient and downgradient wells, EPA arbitrarily affected the results, and, therefore, such sampling is invalid to support any conclusion.

It should also be noted that TAT has again misstated the Utah Ground Water Rules. This groundwater has not been classified by the Utah Water Quality Board, pursuant to U.A.C. R317-6-5. Furthermore, TAT has no legal authority (nor the information and capability) to classify this groundwater as "Class IA, Pristine Groundwater" (Final Report at 11), as TAT attempts to do. Because this groundwater is unclassified, there is no violation of Class IA protection levels, as TAT has attempted to contrive.

II. EPA MUST GIVE UNITED PARK NOTICE AND AN OPPORTUNITY TO COMMENT UPON EPA'S USE OF THE FINAL REPORT IN ANY HRS SCORING OR NPL LISTING OF THE RICHARDSON FLAT SITE.

The EPA's decision to place a site on the National Priorities List ("NPL") is the product of informal notice and comment rulemaking. Kent County, Delaware Levy Court v. U.S.E.P.A., 963 F.2d 391, 393 (D.C. Cir. 1992). Indeed, a site may be placed on

the NPL only after rulemaking by notice and comment. Anne Arundel County v. U.S.E.P.A., 963 F.2d 412, 414 (D.C. Cir. 1992); see Administrative Procedure Act ("APA"), 5 U.S.C. § 553(c).

If EPA utilizes new facts, theories, or interpretive data to derive or support a Hazard Ranking Score ("HRS") and the new facts, theories, or data were not a part of the initial HRS scoring package issued by EPA for public notice and comment, then EPA must give notice of the new facts, theories, and data and its use of this material to score or support a score for the site and give the public an opportunity to comment upon the new facts, theories, and data, and EPA's use thereof. Anne Arundel County v. U.S.E.P.A., 963 F.2d 412, 414-415, 417-419 (D.C. Cir. 1992). EPA's failure to give such notice and opportunity for comment is a violation of both the letter and the spirit of the APA's notice requirements. 963 F.2d at 419.

All of the investigations, sampling and analyses, interpretive data and conclusions summarized in the Final Report were prepared after EPA's proposed rulemaking published in the February 7, 1992 Federal Register, proposing to list the Richardson Flat Tailings site on the NPL and allowing the public an opportunity to comment upon EPA's HRS scoring package. The investigations, sampling, and analysis for the Final Report did not begin until April 1992. (Final Report at 1.) Therefore, none of the facts, interpretive data, or conclusions of the Final Report were included in the initial HRS scoring package promulgated by EPA at the time of its February 7, 1992 notice.

If EPA should use any of the facts, interpretive data, conclusions, or other material from the Final Report or the supporting investigations and analyses for the Final Report, in deriving or supporting an HRS score for the Richardson Flat Tailings site or in otherwise determining the NPL listing for the site, then EPA must first give public notice of its use of this material and an opportunity for public comment upon its use of this material, prior to EPA's finalizing its NPL listing decision for the site. See Anne Arundel County, 963 F.2d at 414-415 and 417-419; Tex Tin Corp. v. U.S.E.P.A., 992 F.2d 353, 355 (D.C. Cir. 1993).

Therefore, United Park expressly requests that EPA give United Park adequate notice and a reasonable opportunity to comment upon any use EPA makes of any material from the Final Report (or its supporting investigations, samplings, and analyses) in deriving or supporting an HRS score for the site or in otherwise determining NPL listing for the site. Such notice and opportunity for comment must, of course, occur before EPA's finalizing its

listing decision for the site so as to give EPA an opportunity to incorporate United Park's comments into EPA's rulemaking process.

Very truly yours,

Rosemary J. Beless

Rosemary J. Beless
Attorney for United Park City Mines Company

RJB:jmc:24840

cc: Richard J. Guimond, Deputy Assistant Administrator, USEPA
Greg Oberley, Superfund Management Branch, Region VIII, USEPA
Mike Zimmerman, On-Scene Coordinator, Emergency Response Branch, Region VIII, USEPA
Mike McCeney, Remedial Project Manager, Superfund Management Branch, Region VIII, USEPA
Kent Gray, Division of Environmental Response and Remediation, Utah Department of Environmental Quality

PIONEER
TECHNICAL SERVICES, INC.
P.O. BOX 3445, BUTTE, MONTANA 59702 PHONE (406) 494-4024 FAX (406) 494-1480

Salt Lake Times, Inc. EXHIBIT A

December 2, 1993

Mr. Ed Osika
United Park City Mines
P.O. Box 1450
Park City, Utah 84060

Dear Ed:

I have completed my review of the USEPA communications regarding the Richardson Flat site that you have forwarded to me:

1. Transmittal letter from M. Zimmerman of EPA, 07/01/93.
2. EPA Memorandum to record, 05/24/93.
3. Final Report, Richardson Flat Tailings, prepared by Ecology and Environment, Inc., TAT, 02/19/93.

My comments follow and address the Final Report, since the letter and memorandum are synopses of that report.

I hope that these comments are helpful in modifying EPA's incorrect conclusions regarding the Richardson Flat site.

Sincerely,

David S. Tuesday
Principal Geochemist/Hydrogeologist

Encl.

100% post-consumer paper & 100% vegetable based inks

COMMENTS REGARDING:

"FINAL REPORT, RICHARDSON FLAT TAILINGS, SUMMIT COUNTY, UTAH"

DATED FEBRUARY 19, 1993 AND
PREPARED BY ECOLOGY AND ENVIRONMENT, INC., TAT

PREPARED FOR:

UNITED PARK CITY MINES COMPANY
P.O. BOX 1450
PARK CITY, UTAH 84060

PREPARED BY:

PIONEER TECHNICAL SERVICES, INC.
P.O. BOX 3445
BUTTE, MONTANA 59702

DECEMBER 2, 1993

PIONEER
TECHNICAL SERVICES, INC.
P.O. BOX 3445, BUTTE, MONTANA 59702 PHONE (406) 494-4024 FAX (406) 494-1480

COMMENTS OF PIONEER TECHNICAL SERVICES, INC.
REGARDING "FINAL REPORT, RICHARDSON FLAT TAILINGS,
SUMMIT COUNTY, UTAH," DATED FEBRUARY 19, 1993, AND
PREPARED BY ECOLOGY AND ENVIRONMENT, INC., TAT

Section 4.2.1, Page 5.

The statement in the Final Report that "[the salt grass] became established when tailings were slurried to the site" is not based on any knowledge, observation or other source whatsoever. It has been over 13 years since tailings were slurried to the site and the grass is still there. The reason it persists is that the tailings impoundment surface is designed as a collection basin so that precipitation that falls on it does not run off, thereby forming a pond/marsh environment. These are the conditions causing the salt grass to thrive, not slurried tailings from 13 years ago. TAT suggests that the vegetation that is currently stabilizing the tailings may disappear in dry weather. This speculation is without any reasonable basis.

Section 4.2.3, Page 6, Items 2 and 3.

The Final Report speculates that there is seepage under the dam because of the wet conditions in the marshy area near the base of the tailings dam. (Final Report at 6.) However, the Final Report does not provide any scientific evidence which indicates that the source of the water in the marshy area is from the tailings dam. The Final Report also ignores three other significant sources of water in the area which cause or contribute to the observed "wet soils" in the marshy area near the base of the tailings dam.

The wetland near the base of the tailings dam is fed by Silver Creek and also by runoff from the highway. Silver Creek has significantly higher discharge during various parts of the year, other than the August 4, 1992 date of the TAT dam inspection, and these flood periods on Silver Creek affect bank storage and the flooding of the marsh area. Likewise, surface runoff from the highway ditch and both surface runoff and groundwater discharge from the hillside drainage area from the highway cut to the north, discharge into the marshy area. Finally, the large pond to the south provides significant hydraulic head to cause seeps in the marshy area on both sides of the diversion ditch. EPA has ignored these evident and plausible sources of water to the marshy area and, instead, has speculated that the wet soils are "probably due to seepage under the dam." (Final Report at 6.) EPA has no evidence to support this speculation.

The Final Report notes a "swampy, loamy area on the north abutment, adjacent to where the embankment meets the abutment" and that the "north monitoring well . . . recharged quickly when bailed." From these conditions, EPA speculates that the water in the swampy area on the north abutment has its source from water seeping "around or through the contact between the abutment and the embankment." (Final Report at 6.) Again, EPA has no evidence for this speculation and has ignored the more plausible sources of the water in the swampy area on the north abutment.

The conditions observed in the swampy ground near the north monitoring well, both surface water and groundwater flow, are most likely due to the effects of the highway drainage system (both surface runoff and groundwater discharge) and the drainage basin to the north of the highway, not to any seepage from the dam. This area is continually recharged from highway surface runoff and groundwater discharge from the north. The Final Report utilizes the selective use of observations to make a point and ignores other plausible explanations for the same phenomenon.

Section 4.2.4, Page 8.

A great deal of significance is assigned to one questionable lead concentration reported for one surface water sample collected in Silver Creek (RF-SW-05). There are several serious problems with this specific data point which cast doubt on its validity.

1) UPCM received split samples from each of the Silver Creek locations that the TAT sampled. Generally, the analytical results from these split samples are similar, except in the case of sample RF-SW-05. UPCM's analytical result for lead in this sample was 29.6 μg/L, not even close to the 151 J μg/L reported by EPA. This discrepancy between split samples is even more evident when reviewed with the adjacent samples.

2) The lead data reported by EPA are very erratic, fluctuating by half an order of magnitude within three sample stations. To illustrate how out-of-line this one EPA lead analysis is, lead concentrations (in μg/L) from EPA's and UPCM's split samples are compared below for Silver Creek surface water samples at and adjacent to RF-SW-05:

Sample Number	United Park Pb Data	EPA Pb Data
RF-SW-04	25.0	36.4 J
RF-SW-05	29.6	151 J
RF-SW-06	34.4	33.2 J

Except for sample RF-SW-05, the Pb concentrations in the splits are comparable. The anomalous EPA lead concentration at RF-SW-05 is not repeated or even elevated in the sample collected farther downstream (RF-SW-06). Additionally, other metals measured by EPA (Zn, Cu, As, Ag, etc.) do not exhibit a similar fluctuating pattern; they exhibit steady or slightly decaying concentrations proceeding from upstream (RF-SW-01) to downstream (RF-SW-06) in Silver Creek. The fact that only lead is elevated in only the one sample, makes that single measurement unbelievable. The extreme variance in EPA's lead concentrations can only be a figment of the laboratory.

3) All the EPA lead concentration data (as well a most of the other metals) from the EPA CLP have been qualified with the "J" flag, meaning that the value is an estimated concentration because "quality control criteria were not met" (Table 9). Also, no field QA/QC samples (duplicate, blank) were presented with these surface water data (the groundwater data has duplicate and rinsate blank samples).

The single anomalous reported EPA lead concentration is not substantiated in the split sample analysis and has no correlation with other metals concentrations. These inconsistencies and the QC problems with EPA's lead data, should cause serious reservations about using these unreliable data for any type of interpretation (e.g. an "observed release").

Section 4.2.5, Page 10.

None of the metals concentrations measured by EPA indicated any problem when comparing upgradient with downgradient groundwater samples (Final Report, Table 6). However, TAT calculates a TDS concentration (no indication of how this was done) and then attributes an increase in TDS to the tailings impoundment. Several significant contributing factors affecting TDS are completely ignored by TAT.

1) The effect of suspended sediment on TDS is considerable, so the significant difference in the amount of suspended sediments between the up- and downgradient samples must be considered for both the total and dissolved fractions when attributing any increase. Total Suspended Solids (TSS) was not measured and neither was TDS.

2) The wells were sampled differently; the upgradient well was pumped with a peristaltic pump which minimized suspended

sediment, the downgradient wells were sampled with bailers which caused considerable suspended sediment to appear in the samples.

3) The two downgradient wells were completed beneath marshy areas and in a different geologic setting than the upgradient well. Because of the geochemistry of organic matter in marshes, one would expect a higher TDS in groundwater affected by significant organic materials. Comparing groundwater in a marsh to groundwater one-half mile away, on high ground, and in different geology, is not appropriate.

The increase in the calculated TDS is primarily due to increases in Calcium (6.4x), Magnesium (5.8x), and Sodium (2.5x). The source of these common rock-forming elements may be due to the influence of the marsh, or the local geology; however, no conclusion can be drawn as to the cause of the TDS increase.

Section 4.2.6, Page 10.

Metal concentrations detected in wetlands sediments are compared to background soil concentrations in the Western U.S., reported in a USGS paper. While this reference is an excellent baseline for comparing metal concentrations in soil, it is entirely inappropriate for comparison to wetlands sediments. These sediments are deposited in slow-moving environments and generally contain significantly higher concentrations of metals for two primary reasons. First, finer-grained sediment collects in this low energy depositional environment and that fine-grained material contains significantly higher adsorption capacity for metals. Second, wetlands sediment contains a large amount of organic matter which has an even greater tendency to adsorb and complex metals, thereby concentrating them into those sediments. It is, therefore, inappropriate to compare metals concentrations in wetlands sediments to background soils. No background wetlands sediment sample was collected to compare these sediment concentrations; a background sample would have eliminated the fine-grained and organic-rich variables from the equation, thereby allowing a reasonable assessment to be made.

Attribution of the metals found in the wetlands sediment to the Richardson Flats tailings impoundment is also troublesome. As documented in several previous sampling exercises, the Silver Creek floodplain sediments are contaminated with metals from upstream sources. It is more likely that the metals found in the wetlands sediment are also from this upstream source.

TAT attempts to address source identification by using one concentration ratio (Cadmium) to "prove" that the metals in the wetlands originate from the tailings impoundment and not from upstream sources. Also, TAT uses only one of the dozen

	As	Cd	Cu	Pb	Hg	Ag	Zn
Wetlands Sediment	203	65	396	4662	4.1	21	10532
Silver Creek Sediment	291	60	426	6076	3.0	27	11312

Averaged EPA sediment concentrations (1989 & 1992) in mg/Kg.

The attribution of the metals in the wetlands sediment is therefore completely unfounded speculation. The arbitrary use of concentration ratios has no basis and is scientifically indefensible. Several, more compelling lines of reason point to upstream sources in Silver Creek as the origin of metals found in the wetlands. In fact, an internal EPA communication from Dr. Werner Raab to the FIT regarding the site suggests just that -- the wetlands area is likely contaminated by upstream metal sources.

Section 4.3.1, Page 11.

TAT acknowledges that groundwater in the area of the municipal/sanitary landfill showed no organic contaminants that could be attributed to the site. However, TAT speculates that increases in TDS and arsenic concentrations are attributable to the landfill site. TAT attempts to support this attribution by a comparison of the background sample, RF-MW-01, with the two downgradient sample locations, RF-MW-02 and RF-MW-03. However, because the TAT used entirely different sampling techniques at the upgradient, background well and the two downgradient wells, the analytical data is not comparable. The upgradient well was purged and sampled with a peristaltic pump and was slightly cloudy. The downgradient wells were purged and sampled with a bailer, and the water was nearly opaque red-brown with suspended sediment. During development, all three wells had the same dark red, silty water evacuated from them. These two very different sampling techniques resulted in the upgradient sample being only slightly cloudy, while the downgradient samples were opaque dark red, full of suspended sediment (originating from the formation due to poor completion). The effects of using a different sampling technique on the upgradient well from the sampling technique used on the downgradient wells include: those organic and inorganic compounds that preferentially adsorb to mineral surfaces will be amplified in samples with high sediment content (RF-GW-2 and RF-GW-3), as opposed to low sediment samples (RF-GW-1); and the natural compositions of the sediment material include several metals which will obviously be elevated in the unfiltered sample since the sediment had ample time to dissolve in the acidified (HNO_3) water. There would be less of a

problem if the same sampling procedures were followed at all three of the wells and the same highly turbid sample had been collected at all three locations. But that was not the case, and only the downgradient wells were sampled in a manner that caused them to be extremely turbid. Therefore, when the analytical data are compared to the upgradient non-turbid sample, the differences in concentrations cannot readily be attributed to the landfill; any differences may just as easily be attributed to the effects of the different sample turbidity (and, hence, the sampling procedure). The TDS and arsenic increases are attributable to the significant suspended sediment in the downgradient wells, rather than to the landfill, since almost all of the metals concentrations in those downgradient samples are also significantly higher.

Conclusion.

In conclusion, the TAT Final Report contains several speculations and hypotheses that are presented as facts and conclusions. An impartial scientific evaluation of the available site information yields none of the conclusions presented in the Final Report; hence, TAT's conclusions are nothing more than unsupported speculation.

Salt Lake Times, Inc. EXHIBIT B

BEFORE THE UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF THE PROPOSED LISTING OF RICHARDSON FLAT TAILINGS, SUMMIT COUNTY, UTAH, ON THE NATIONAL PRIORITIES LIST	)	AFFIDAVIT OF EDWIN L. OSIKA, JR. IN SUPPORT OF UNITED PARK CITY MINES COMPANY'S COMMENTS CONCERNING THE FINAL REPORT, RICHARDSON FLAT TAILINGS, PREPARED BY ECOLOGY AND ENVIRONMENT, INC., TAT, FEBRUARY 19, 1993

STATE OF UTAH)
: ss.
COUNTY OF SALT LAKE)

EDWIN L. OSIKA, JR., being duly sworn upon his oath, deposes and says:

1. I am currently the Executive Vice President of United Park City Mines Company.

2. I have personal knowledge of the Richardson Flat Tailings area in Summit County, Utah.

3. I have directed and managed the capping and revegetation of the Richardson Flat Tailings impoundment.

4. I have personally observed the activities of the United States Environmental Protection Agency ("EPA") and its contractors at the Richardson Flat site.

5. Prior to EPA's contractor's air monitoring study conducted in the Richardson Flat area on June 10 and 11, 1992, United Park City Mines Company ("United Park") offered to provide EPA with a written Consent to Access to the Richardson Flat site for these air monitoring activities; however, EPA representatives stated that site access was not necessary because the air monitoring would be conducted off the actual site, and EPA declined United Park's offer of a Consent to Access for the site.

6. Since the August 1992 soil sampling at the Richardson Flat area conducted by EPA's contractor, United Park has covered almost all of the salt grass in the tailings impoundment with an average of one and one-half feet of topsoil. This topsoil will be seeded in the spring of 1994. Likewise, United Park is in the process of covering those areas of the site where soil cover is "thin" with additional topsoil and will then seed the topsoil with native foliage so that no areas of sparse cover will remain at the site.

7. I am familiar with and have observed the most recent highway construction in the Richardson Flat area.

8. I have personally observed that there is a seep emerging from the highway in the area north of the north abutment of the Richardson Flat tailings dam. A portion of this seep is piped from under the highway and is discharged immediately to the north of the highway, with the balance of the seep emerging south of the highway in the swampy ground near the north abutment and the north monitoring well. This area has always been a wetland area and the north monitoring well has always recharged rapidly. This area is continually receiving surface water runoff from the highway and groundwater

discharges from the drainage basin north of the highway. The wet area is not caused by the tailings dam and does not affect the integrity of the dam.

9. United Park personnel regularly review the crest and the face of the tailings dam and any erosion caused by snow melt is checked and corrected on an annual basis.

10. During the summer of 1992, United Park completed its work to flatten the banks of the diversion ditch and add topsoil to the banks of the diversion ditch, which diverts water around the tailings impoundment. The hillside diversion ditch was removed during topsoil stripping, but United Park is now reestablishing the hillside diversion ditch along with the seeding and revegetation of the affected areas.

11. I personally observed EPA's contractor's drilling of monitoring wells RF-MW-02 and RF-MW-03 in June 1992. As proven by the landfill materials (e.g., diapers, waste paper products, plastic bags, burnt wood, concrete, etc.) drilled out of these wells, both of these monitoring wells are located within the sanitary/municipal landfill area used by Park City Municipal Corporation. United Park has filed a detailed report with Region VIII, EPA, to this effect.

DATED this 13th day of December, 1993.

EDWIN L. OSIKA, JR.

SUBSCRIBED AND SWORN TO before me this 13th day of December, 1993.

Julie G. McKenzie
NOTARY PUBLIC
Residing at Davis County

My Commission Expires:

NOTARY PUBLIC
Julie G. McKenzie
215 South State, 12th Flr.
Salt Lake City, Utah 84111
My Commission Expires
June 22, 1997
STATE OF UTAH