

May 12, 1987

TO: Technical File

FROM: Leland C. Spencer, Reclamation Mining Engineer

RE: Draft ICR & TA Coarse Resfuse Pile Expansion, Kaiser Coal Corp. - Sunnyside Mines ACT/007/007, Carbon County, Utah

INITIAL COMPLETENESS REVIEW

UMC 771.23 PERMIT APPLICATIONS - General Requirements For Format and Contents.

- (a) The format of the application is helpful as related to the regulations.
- (b) Information in the permit application is often unclear in areas where there are questions of strict compliance. However organized, the operator may need to be extremely clear and complete in these areas so that technical compliance can be ascertained.
- (c) The methodology was documented as far as it went.
- (d) The name and address of the consultants in my opinion is adequate.
- (e) Maps and Plans - General Requirements

Since the pile construction must comply throughout a twenty five year life, it would be helpful for the reviewer's understanding to have a map showing the configuration of the pile at the midpoint of the life of the pile with details of underdrain construction, roads, sediment control and contemporaneous reclamation clearly identified.

A map should show the full area and extension of the subdrain, refuse roads, the boundaries of the Carbon Railroad Right-of-Way and any other utility or right-of-way corridors.

UMC 771.25 PERMIT FEES

No comment.

UMC 771.27 VERIFICATION OF APPLICATION

Carl Winters certified maps as P.E. and if he is the responsible official he should verify under oath that the application to amend the mine permit is true and correct to the best of the official's information and belief.

UMC 782.14 (a) 3

Since the applicant is self bonded and has filed for Chapter 11. The current status of the reclamation bond is pertinent as it relates to extension of the bond on the expansion of the course refuse pile as presented.

UMC 782.14 (c)

The operator should include a listing of any violations (other than the Division's) relating to operation of the adjacent slurry cells or refuse in the last three years pursuant to this section.

UMC 782.15 RIGHT OF ENTRY AND OPERATION INFORMATION

The applicant should have a copy of this information including liens and right-of-ways through this property. It would be helpful to know if any restrictions in the Right of Entry exist.

UMC 782.17 (a) Permit Term Information

The Division appreciates the applicants intent of building a "life of mine" refuse disposal site that will comply over the long term. Coal sales, economics and the applicant's use of the pile for underground development waste and dewatered fine refuse are unknowns. Due to these unknowns

the Division must assume reclamation of the pile could occur at any time or at any level. Therefore the final reclaimed configuration of the pile should be shown at any level.

UMC 782.19 Identification Of Other Licenses and Permits

A reference has been made to MSHA requirements of the pile. The applicant should identify the MSHA submitted plans (permit) for the coarse refuse and the status of these plans. All other permits including Federal and State air and water quality permits must be in place prior to final approval. Modifications to the pile and plans required by other permits should be incorporated in the final approval.

UMC 782.20/782.21 IDENTIFICATION OF LOCATION OF PUBLIC OFFICE FOR FILING OF APPLICATION/NEWSPAPER ADVERTISEMENT

Does the applicant need to advertise this amendment?

UMC 783.12 GENERAL ENVIRONMENTAL RESOURCES INFORMATION

783.12 (a & b) The application has addressed these areas in the main permit document and had a historic/cultural survey of the refuse area. Before approval by this Division, clearance will be required by the approved authority of the Historic Advisory Council.

UMC 783.13 DESCRIPTION OF HYDROLOGY AND GEOLOGY: General Requirements

The applicant has provided soils and geologic information that appears to meet these requirements however, information concerning the source of the existing coarse refuse seep is speculative. The applicant has sized the underdrain without a showing of how this information enters into the engineering considerations of underdrain size and configuration.

It seems to me that besides providing data sheets, the applicant should resolve some data or install some monitoring wells to determine the sources, quality and flow of the water from the slurry cell, grassy trail creek (the alluvial aquifer) or infiltration of precipitation on the existing site and the projected pile. This information would help to verify the design of the drainage in the proposed pile expansion.

UMC 783.14 GEOLOGY INFORMATION

The applicant has presented the geology (soils) and it appears to be enough to assess the stability of the coarse refuse expansion. Have the material characteristics of the underground development waste been ascertained and could they affect the free draining characteristics of the proposed pile.

UMC 783.15 GROUND WATER INFORMATION

Due to the borderline quality of the water from the coarse refuse seep, it would be prudent of the applicant to know if percolation through the refuse is the culprit, or percolation of water from the slurry cells. (Is there a reaction of flow on the seep when the slurry cell is inactive miners vacation, UMWA strike etc?)

In the future, will the west slurry cell be reactivated? After mining stops will the flow be reduced and the quality improve? The cells may not longer contribute and the applicant could show that following reclamation, leaching of the pile is of no consequence on the quality of the seep. Does the quality of the seep water reflect the natural ground water quality. Quality analysis of the adjacent seeps CR-1, CR-2 and the alluvial aquifer could be used as a baseline and compared with the coarse refuse seep CRS. The proposed underdrain will continue to flow after final reclamation and bond release.

UMC 783.16 SURFACE WATER INFORMATION

No comments.

UMC 783.17 ALTERNATIVE WATER SUPPLY INFORMATION

I agree that, whatever the source, the expansion of the pile would contribute very little to the flow of the coarse refuse seep. Since the expansion itself is not interrupting any ground water source, only diminution of infiltration from precipitation of the area of the expansion could be viewed of issue. On the other hand, the expansion is not separated physically from the existing coarse refuse and the slurry cells and any interaction could affect the final post reclamation configuration and stability.

UMC 783.18 CLIMATOLOGICAL INFORMATION

No reason to request this information and it is of interest only with regard to how the applicant applies it.

UMC 783.19/20 VEGETATION/ FISH AND WILDLIFE INFORMATION

No comments

UMC 783.21 SOIL RESOURCE INFORMATION

It appears approximately 430,000 CYDS of soil will be required for final reclamation of the completed refuse disposal area, and 120,000 CYDS will be required from a site away from the refuse expansion area. The applicant should state how much excess borrow he has available following reclamation of the entire area contained in the Sunnyside Permit.

UMC 783.22 LANDUSE INFORMATION

The applicant's description of the past and current landuse appears complete and accurate.

UMC 783.24 MAPS: GENERAL REQUIREMENTS

The applicant should identify, as above any right of way boundaries contiguous or within the permit area including the Carbon County Railroad or specify that no other boundaries exist.

It appears that the T14S is in error on the coarse refuse expansion area maps or in the ownership map in the mine permit.

The location of water supply intakes for the current users of Iceland Creek. (In original permit?)

UMC 783.25 CROSS-SECTIONS, MAPS AND PLANS

(e) A cross-section and plan view of the existing coarse refuse subdrain culvert.

(f) The location and extent of the subsurface water feeding the coarse refuse seep.

() The proposed subdrain, and Bench configurations do not reflect the same design as in Exhibit V and the applicant should indicate why these were changed.

() The applicant should include design details (profile and cross-sections) of the outlet of the underdrain at the railroad embankment, the underdrain profile (from toe to top of the fill), protection of the underdrain from contamination during and shortly after construction etc.

() The applicant should show the design drawings and profiles after 3 years or the midpoint showing contemporaneous reclamation completed, sediment, control, all grades etc.

() The applicant should show a forecast map of soil removal and use.

UMC 783.27 PRIME FARMLAND INVESTIGATION

No Comments.

UMC 784.11 OPERATION PLAN: GENERAL REQUIREMENTS

(a) Does the estimate of preparation plant reject include dewatered fine refuse and what is the anticipated top range estimate of underground development waste.

The applicant suggests that the fill should be classified a valley fill however regards the pile as head of hollow and provides information concerning these regulations. In the early permit terms, if the pile was reclaimed, I would agree that it should be classified as a valley fill and upon completion above the level of slurry cells, a head of hollow fill.

(b) What equipment will be used to develop 90% dry density compaction and topsoil spreading on the slope contours.

(b-2) The applicant should describe in more detail the topsoil placement on the benches and the operation of the equipment along contour of the slopes between benches.

(b-3) The applicant has addressed monitoring by visual methods during construction under a certified inspector and toe seep monitoring. Would it be prudent to install monitoring wells to assure the pile was free draining during construction.

(b-4) The applicant should evaluate what the risks of failure to the environment and public health.

UMC 784.12 OPERATION PLAN: GENERAL REQUIREMENTS

784.11(b-1) My understanding is that Kaiser has not addressed the embankments of two ponds due to the following: The rail cut pond and coarse refuse toe ponds have been previously approved. The coarse refuse toe pond will be built in June 1987. The coarse refuse pond is

an incised pond and will be left as a permanent stock water pond. Will this pond fill with silt in three years with no maintenance? At a minimum, the applicant should address the requirements of UMC 817.49.

(b-1) The time table for reclamation is tied to the projections of refuse quantity. An additional map describing contemporaneous reclamation based on reject quantities projecting periodic bond releases would complete the picture. In the interest of incremental bonding increases and releases, the applicant should project the schedule of disturbance and reclamation.

(b-3) The plan for backfilling and grading should include methods of topsoil stabilization for the slopes between benches prior to stabilization due to establishment of vegetation.

(b-4) The anticipated performance of reclamation of the pile could be described more clearly. The applicant has stated that he "will not attempt to place topsoil on the outslope between any two benches prior to completion of the grading of the uppermost bench" (application page 49). This statement is interpreted by this reviewer to assume that the slopes between all of the benches will not be topsoiled until the top bench is reached after some 25 years. The applicant should clarify in the plans, the intent, since contemporaneous reclamation should include topsoiling the slopes and leaving barren refuse slopes to erode and deposit refuse on reclaimed benches is likely to be found an unacceptable practice.

(b-5, b-6) No comment

(b-7) The applicant should address measures to be employed to remove debris particularly from underground development waste.

(b-8) Not applicable

(b-9) Measures other than those mentioned in the plan may be required per the the Clean Air Act and the Clean Water Act.

UMC 784.14 PROTECTION OF THE HYDROLOGIC BALANCE

(a-3) As related to the the toe drain and stability based on unsaturated conditions, the applicant should describe the projected rate of percolation and quantity of water

projected at the subdrain and the maximum degree of saturation expected based on the 100 year 24 hour event (note that redraft of Utah rules will require 100 year - 6 hour event) coupled with seepage from the slurry ponds or the Grassy Trail alluvium.

UMC 784.15 RECLAMATION PLAN: POSTMINING LAND USE

No comments.

UMC 784.16 RECLAMATION PLAN: PONDS, IMPOUNDMENTS, BANKS, DAMS AND EMBANKMENTS

comments.

UMC 784.17 PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

No comments.

UMC 784.18 RELOCATION OR USE OF PUBLIC ROADS

Not applicable

UMC 784.19 UNDERGROUND DEVELOPMENT WASTE

(a) The applicant needs to show design detail of a filter around the 12 inch rock underdrain even though the addition of the eight inch perforated pipe is provided. It seems to this reviewer the purpose of the rock is compromised by not providing a filter. If the pipe surrounded by the filter is in essence the functioning underdrain, then what purpose is the rock?. In my opinion, the intent of the rules, was that the rock function as the underdrain and the rules call for a filter. Piping and resultant sediment from the refuse would fill the voids and eventually make the rock ineffective as a drain and also promote piping in the refuse above (UMC 817.72(b)(2)). Would the use of filter fabric, as typically used in modern highway subdrains against fine refuse be considered standard design practice? It is my understanding that the filter cloth is used in filter design replacing the fine sands that would normally be required against the refuse material.

The applicant should show profiles of the subdrain outlet and conveyance through the railroad embankment as well as protection of the subdrain from contamination during construction. The design parameters for the underdrain such as expected volume, volume calculations, longterm considerations for functioning of the pipe, purpose and rationale for size and use of the of concrete cradle for pipe protection should be discussed.

Since the pile is designed to handle runoff by allowing infiltration and stability is based on a nonimpounding conditions, prior to reactivation of the west slurry cell, the stability should be reviewed. Figure 1 of Exhibit V shows the subdrain extending to the 6350' contour whereas map E4029 not only does not show the subdrain clearly but also does not extend the subdrain to this level. UMC 817.72(b)(1)(ii) also requires the subdrain to extend from the toe to the head of the fill. The extent and condition of the existing subdrain under the West Slurry Cell and the present coarse refuse is not presented by the applicant. Please justify why the new drain should not extend to the head of the pile along the entire length of coarse refuse.

In the geotechnical report Exhibit V, the consultant states: "Some effort is being expended at the present time to densify the refuse material as it is placed in the disposal area and it is anticipated the same effort will be used to densify the material placed in the refuse pile." The applicant only states that compaction in 24 inch lifts per UMC 817.72(c)(1) and the use of truck wheels and dozer. Please describe construction and compaction to clarify what level of compaction is expected by the consultant as utilized in material properties to insure stability and compliance with UMC 817.85(c). Utilizing the minimum methods described in the application result in these requirements for stability expectations

(b)(1) Appears adequate

(b)(2) As mentioned above a more precise model of groundwater inflow into the coarse refuse and infiltration of surface water as relevant to stability and underdrain requirements should be provided.

(b)(3) Not applicable.

(b)(4) The applicant states eight inch rather than twelve inch rock is available. The applicant should provide design parameters for the drain, then the change in the size of the rock is of some relevance. The applicant should test and describe the suitability of the available underdrain material per UMC 817.72(4).

784.19(b)(5) The applicant's consultant has provided the stability analysis based on critical failure surface within 30 feet of the surface, assumes no pore pressures from infiltration, estimates material properties from the existing refuse pile, and assumes construction methods. The applicant should agree to maintain construction methods that will be consistent with the parameters used in assessing long term stability over the life of the pile.

(c) The applicant has described the pile as a valley fill however has provided information pertinent to head of hollow fill as a courtesy, since the fill would be considered head of hollow if completed. The applicant's geotechnical consultant has determined a factor of safety of 1.8 and has found minimum that the critical surfaces do not appear near the base of the pile. The applicant's consultant should address keyway cuts and rocktoe buttresses since relief from their construction needs to be based on stability per 817.71(i) with long term considerations.

UMC 784.20 SUBSIDENCE CONTROL PLAN

No comment.

UMC 784.22 DIVERSIONS

No comment

UMC 784.23 OPERATION PLAN: MAPS AND PLAN

(a) No underground works are pertinent to this revision.

(b-1) The railroad right-of-way and any utility corridors which are in the permit or adjacent area should be shown on the maps.

(b-2) The applicant shows areas of land to be affected to however, where the underdrain crosses the railroad should be described and shown.

(b-3) Each area where the performance bond will be increased or released should be shown on the map. All disturbed areas must be covered until bond release.

(b-4) The loading for refuse is previous approved and the unloading and topsoil loading areas are implied as the complete pile as it is constructed.

(b-5) No storage areas in the revision are mentioned for any areas other than the coarse refuse pile itself. Topsoil will be removed and spread in the same operation and no topsoil will be stored. As mentioned above the applicant should show this sequence for (each) bench on a map.

(b-6) No comment

(b-7) The sources of waste listed are restricted to coarse refuse from the preparation plant and underground development waste. It is assumed that dewatered fine preparation plant refuse may also be deposited on the pile, however the applicant has not identified the slurry cells as a source.

(b-8) No comment

(b-9) Not applicable

(b-10) Does the applicant have any intention of expanding or building a slurry cell on top of this coarse refuse?

(b-11) The applicant shall provide a longitudinal profile of the underground drain, a map showing a worst case reclamation condition, possibly the fifth year and how the pile would look if the applicant quit mining and reclaimed at this time.

(b-12) Locations of seeps are shown. As discussed above, subsurface water monitoring points for inflow into the refuse pile and in the refuse pile could be provided to monitor conditions of the pile during and after construction.

(b-13) The applicant has identified these features.

(c) The maps have been certified.

UMC 784.24 TRANSPORTATION FACILITIES

(a) The application has proposed to use existing roads: extension of the existing coarse refuse road and reactivation of the prelaw old coarse refuse road are planned. The existing coarse refuse road is permitted except as extended to the top of the pile. The extension of the road is shown in this revision and the road extension would be constructed consistent per the existing permit and performance standards.

The major portion of the old coarse refuse road is outside the limits of the proposed coarse refuse. The applicant agrees to limit the extension of the old coarse refuse road within the pile. The applicant requests that since the road was constructed prelaw and designed for refuse haulage, that where the road is outside of the design standards, a variance be provided to the rules. Per section 817.150(d)(1) the applicant should provide more description certified by a registered qualified professional engineer of the pertinent design standards where the applicant's alternative will result in performance equal or better than that resulting from upgrading the existing road to comply with UMC 817.151-156.

UMC 784.25 RETURN OF COAL PROCESSING WASTE TO ABANDONED UNDERGROUND WORKINGS

The applicant does not intend return any processing waste underground.

UMC 784.26 AIR POLLUTION CONTROL PLAN

The applicant should incorporate any provisions of the approved PSD and all State Air Quality Permits into these plans prior to Division approval.

Haul road dust control, pile compaction and contemporaneous reclamation (without any details) is the essence of the air pollution control plan.

INITIAL TECHNICAL ADEQUACY

UMC 817.11 SIGNS AND MARKERS

No comments

UMC 817.13 CASING AND SEALING OF EXPOSED UNDERGROUND OPENINGS:
GENERAL REQUIREMENTS

Not applicable

UMC 817.14 CASING AND SEALING OF UNDERGROUND OPENINGS: TEMPORARY

Not applicable

UMC 817.15 CASING AND SEALING OF UNDERGROUND OPENINGS: PERMANENT

Not applicable

UMC 817.21 TOPSOIL: GENERAL REQUIREMENTS

(a) Only "salvagable topsoils" will be salvaged and no topsoil storage piles are anticipated. The applicant should consider the material balance initially in the construction of the underdrain extending to the existing underdrain for the refuse. Does the bottom of the canyon in the this extension have any salvageable soils? The sequence for reclamation and soils as required above should indicate whether the topsoil "cut and fill" balance will not result in excess topsoil that would need to be stockpiled in the initial startup phase. This balance is also of value to indicate the maximum disturbed area when all the topsoil is stripped for reclamation at any time.

(b) Applicant intends to immediately redistribute soils upon removal without stockpiles.

UMC 817.21 TOPSOIL: GENERAL REQUIREMENTS

(a) The applicant should agree to remove all vegetation from the area of construction, not just large trees.

(b) The applicant should protect soils from being contaminated with refuse from the refuse unloading and spreading areas until soils are removed.

(c) No comments

UMC 817.23 TOPSOIL: STORAGE

(a) Kaiser should demonstrate on cut & fill balance that in early years that no topsoil will be stockpiled.

(b) No comments, if applicant does not need to stockpile soil.

UMC 817.23 TOPSOIL: REDISTRIBUTION

(a) Applicant will spread topsoil over rough surface of refuse.

(b) The applicant should provide the methodology and equipment that will be used per this section particularly with regard to the slopes between benches. What equipment will be used on contour.

UMC 817.25 TOPSOIL: NUTRIENTS AND SOIL AMENDMENTS

No Comments

UMC 817.41 HYDROLOGIC BALANCE: GENERAL REQUIREMENTS

(a) No comments

(b) If the applicant does not intend to topsoil the slopes between benches until the "uppermost bench". There is concern of refuse leaching onto revegetated benches and that within 8 years the bench will be full of refuse sediment.

(b) The applicant, as mentioned above, has not described outflow quantities, determined the quality of source waters feeding the groundwater seep in the existing refuse pile. The expansion of the coarse refuse would only have an impact from the infiltration of surface water infiltrating to the underdrain. The applicant should address the long term impact on the postmining water quality of the seep.

(c) The applicant must have an approved NPDES and State Water quality permits and include conditions of the permits prior to this approval.

(d) I am not sure the applicant in Exhibit IV has emphasized construction and reclamation practices that minimize water pollution. However, with the commitment of the applicant to maintain control of surface water in the refuse by containing it within refuse, away from the reclaimed benches, and directing it to ponds, the surface water quality should be assured. The unavoidable discharge quality of the underdrain is then the only concern.

No review of engineering details of diversions, channels or sediment ponds was done by this reviewer.

UMC 817.42 HYDROLOGIC BALANCE: WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS

See comment above UMC 817.41(d)

The applicant is utilizing the benches for sediment control and conveyance. Upon reclamation, the benches provide for water harvesting. The applicant should further explain the rationale and maintenance of contemporaneously reclaimed benches with regard to trapping refuse sediment. It seems to me that once a bench and slope are reclaimed the applicant should avoid directing drainage laden with refuse sediment onto these benches.

No review of engineering details or water quality of diversions, channels or sediment ponds was done by this reviewer.

UMC 817.43 HYDROLOGIC BALANCE: DIVERSION AND CONVEYANCE OF OVERLAND FLOW, SHALLOW GROUND WATER FLOW, AND EPHEMERAL STREAMS

The design of the benches per Rollins, Brown and Gunnell Exhibit V, figure 1 is a different design than that by the applicant and the change should be explained.

Is the applicant's view of the benches as above, temporary disturbed drainage conveyance until the contemporaneous reclamation is completed?

(d) Is two feet of water on the bench as designed likely to contribute to local bench failure due to pore pressures? Could seeps develop on the face of the slopes due to a layer of fine sediment or refuse or clays from underground development waste?

No further comment without the review of engineering details of diversions, channels or sediment ponds.

UMC 817.44 HYDROLOGIC BALANCE: STREAM CHANNEL DIVERSIONS

No comment without the review of engineering details of diversions, channels or sediment ponds.

UMC 817.45 HYDROLOGIC BALANCE: SEDIMENT CONTROL MEASURES

The applicant's rational for control of sediment on benches reclaimed should be described.

No further comment without the review of engineering details of runoff, diversions, channels or sediment ponds.

UMC 817.46 HYDROLOGIC BALANCE: SEDIMENT PONDS

No comment without the review of engineering details of runoff, diversions, channels or sediment ponds.

UMC 817.47 HYDROLOGIC BALANCE: DISCHARGE STRUCTURES

No comment without the review of engineering details of runoff, diversions, channels or sediment ponds.

UMC 817.48 ACID FORMING TOXIC FORMING MATERIALS

(a) The applicant does state that the refuse expansion is designed to receive acid- toxic- forming materials. Burial by inert material with four feet of soil on a stable revegetated slope, would appear to keep any significant infiltration and subsequent leachates from contributing significantly to the underdrain discharge, contaminating surface water quality.

(b) The "topographic high" used as justification for directing surface waters, presupposes Kaiser will be mining for twenty five years in the future, the permit term and the bond amount are determined for abandonment and reclamation at any time.

(c) As long as the applicant contains all acid and toxic forming waste in the refuse, and controls the effluent from this material to be contained in the refuse, the request to relief from a 30 day burial limit seems reasonable.

(c) Acid-forming and Toxic-forming wastes are stored or buried in the coarse refuse. Does the design, not to impound water and maintain free draining conditions to the underdrain conflict with underdrain effluent quality?

UMC 817.49 HYDROLOGIC BALANCE: PERMANENT AND TEMPORARY IMPOUNDMENTS

The coarse refuse pond will be made into a stock watering pond for postmining land use. The railcut and coarse refuse toe ponds will be removed.

No comment without the review of engineering details of runoff, diversions, channels or sediment ponds.

UMC 817.50 HYDROLOGIC BALANCE: UNDERGROUND MINE ENTRY AND ACCESS DISCHARGES

Not applicable

UMC 817.52 HYDROLOGIC BALANCE: SURFACE AND GROUND WATER MONITORING

(a-1) The applicant should respond with the ground water levels, infiltration rates, subsurface flow and storage characteristics and monitoring in the pile and above the pile to assure that the groundwater, infiltration and subdrain are responding as designed.

(a-2) Not applicable

(a-3) Not applicable

(b-1) The applicant must have an approved NPDES permit and any operating plans specified by permit should be incorporated in the monitoring plans. Any effluent leaving the permit area shall be monitored quarterly as per the Sunnyside approved monitoring plan.

UMC 817.53 HYDROLOGIC BALANCE: TRANSFER OF WELLS WATER MONITORING

Not applicable

UMC 817.54 HYDROLOGIC BALANCE: WATER RIGHTS AND REPLACEMENT

Not applicable

UMC 817.55 HYDROLOGIC BALANCE: DISCHARGE OF WATER INTO AN UNDERGROUND MINE

Not applicable

UMC 817.56 HYDROLOGIC BALANCE: POST MINING REHABILITATION OF SEDIMENT PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES

Diversions 1 & 5, the underdrain, underdrain discharge, and the coarse refuse sediment pond will be left as permanent structures.

UMC 817.57 HYDROLOGIC BALANCE: STREAM BUFFER ZONES

(a) The applicant states "disturbance of the land from 100 feet from the point of origin of the stream channel at the downstream side of the railroad embankment". The applicant seems to be stating that Icelander Creek starts 100' below

the railroad embankment to meet stream buffer requirements. The discharge from the refuse seep area and proposed underdrain discharge through the railroad embankment is moving to the other side of the embankment and may not constitute much of a departure regarding stream buffer requirements from the existing permit.

The applicant is required as above, to show design drawings of the underdrain profile and the discharge structures at the toe of the pile and through the railroad embankment.

UMC 817.59 COAL RECOVERY

This section is not applicable for the coarse refuse disposal area since coal recovery from preparation plants is maximized in the plant design based on current economic and market conditions.

UMC 817.61 USE OF EXPLOSIVES: GENERAL REQUIREMENTS

This section is not now applicable for the coarse refuse disposal area since normal operation of the coarse refuse area does not require their use. If explosives are used the applicant will comply with these provisions.

UMC 817.62 USE OF EXPLOSIVES: PREBLASTING SURVEY

If explosives are used the applicant will comply with these provisions.

UMC 817.65 USE OF EXPLOSIVES: SURFACE BLASTING REQUIREMENTS

If explosives are used the applicant will comply with these provisions.

UMC 817.67 USE OF EXPLOSIVES: SEISMOGRAPHIC MEASUREMENTS

If explosives are used the applicant will comply with these provisions.

UMC 817.68 USE OF EXPLOSIVES: RECORDS OF BLASTING OPERATIONS

If explosives are used the applicant will comply with these provisions.

UMC 817.71 DISPOSAL OF EXCESS SPOIL AND UNDERGROUND DEVELOPMENT
WASTE: GENERAL REQUIREMENTS

(a) The coarse refuse pile is the designated preparation plant coarse refuse and underground development waste disposal area.

(a-1) The applicant has shown that in the past the leachate from the coarse refuse has met applicable water quality standards. The applicant could show that after reclamation, the amount of effluent expected. Much of the runoff should be held by the soils, harvested by vegetation, or evaporate and not infiltrate and leach the refuse. Again as above, knowing the source of the existing seep discharge would be useful in forecasting post reclamation conditions.

(a-2) The applicants engineering consultant has demonstrated stability of the fill under certain parameters. The applicant needs to demonstrate that during and throughout construction these parameters including compaction, free draining, clear and open underdrain etc. will be met.

(a-3) The land mass designated as the disposal area appears as suitable for reclamation compatible with the natural surroundings as another area. The applicant could mention any other alternatives considered.

(b) The design of the fill has been designed utilizing professional engineers and standards. I am unfamiliar with the specific method for earthquake stability utilized by the California Division of Water Resources. The copy of the applicant's engineering report, I have, does not include Figure 26. Please elaborate on the relationship to the deterministic long term factor of safety of 1.5 recognized by the regulations and the (probabilistic) method used. The applicants design is based on use of plastic pipe in a cradle with a filter covered with large rock and no filter around the large rock. Please elaborate on the rationale for the design including the design standards used in this structure.

(c) The applicant must remove not only large trees but all vegetative and organic materials or justify.

(d) The applicant must provide soil protection prior to the planting season for all soils placed on the slopes and not revegetated. It may be well to not place soils on the outslopes and benches until the planting season. The use of benches for slope protection are adequate. It is assumed soil will be placed on the bench and the slope above the bench at the same time.

(e-1) Even though the disposal area is not located on the most moderately sloping site, it appears a logical location. With stability assured, the site appears most suitable.

(e-2) The rules require rock toe buttresses for this site as well as in the rules for head of hollow fills. The applicant has stated that the use of a buttress or keyway is not prudent. In my opinion, the the engineer who the applicant has designated for stability, Rollins, Brown and Gunnell should respond. To eliminate the buttress or keyway which in all probability would enhance stability, "prudent" may not be the best choice of words to use regarding another engineer's determination not to use the buttress. When stability and determination of a satisfactory level of risk of failure are at issue, the design must be prudent using standard methodology, regardless of the rules. The geotechnical engineer may have found through the analysis, a rock buttress as required by the rules, as not necessary for stability at a reasonable level of risk. This is more of a cost benefit determination, and meeting a 1.5 factor of safety lends to justification.

(f) Due to stability considerations the applicant should demonstrate that compaction will result in the parameters required for stability based on recognized professional standards. The 24 inch lifts, use of a truck wheels, and dozer wheels and past practice are recognized. However, as discussed above the engineering report refers to the applicant densifying the material more in the existing coarse refuse pile. What additional methods are used to enhance the compaction in the existing operation.

(g) Depressions and impoundments in the pile and following reclamation either from the existing slurry cells must be eliminated. The applicant has consistently separated the expansion from any discussion of the existing coarse refuse and slurry cells except with regard to the material properties of the refuse with regard to stability. The structures are connected and slurry cell reclamation must be completed at the minimum standards for the new coarse refuse. Will an impoundment between the slurry cells and coarse refuse be left following reclamation? The applicant must consider the long term effect of the benches full of silt.

(h) The use of terraces, (benches), at the width and vertical spacing is specified in other sections of the regulations and would be approved for use by this Division.

(i) The applicant has committed to follow inspection procedures per this section.

(j) The applicant is disposing of coal processing waste in a valley fill. On page 93 of the applicant's submittal dewatered fine processing waste is included with underground development waste and coarse refuse. The applicant should indicate how much fine refuse -28 sieve will be deposited in the pile and whether this material will be kept toward the interior of the pile and away from the outsoles. Compliance with UMC 817.85 is required. Is the material demonstrated to be toxic and acid forming? If the applicant has no better disposal option, any toxic and acid forming characteristics of the material in coarse refuse pile may be mitigated as long as they are retained in the disposal area and don't significantly degrade the surrounding environment.

(k) An underdrain system is proposed by the applicant and the pipe is protected by a filter. The applicant should provide the rationale for not using a filter between the refuse and the large rock. In my mind, the rock seems to be put in not as the underdrain, but because the rules require it. The applicants geotechnical engineer has designed a pipe system with filter for the underdrain.

(l) The applicant's consultant has determined stability after investigation of the material properties of the refuse and foundation.

(m) Not applicable

UMC 817.72 DISPOSAL OF UNDERGROUND DEVELOPMENT WASTE AND EXCESS SPOIL: VALLEY FILLS

(a) The applicant's consultant has determined a static safety factor of greater than 1.5 based on material properties and proposed construction methods.

(b) A subdrain is proposed for the refuse pile. The applicant has not asked for consideration concerning the durability of the rock and it is therefore assumed the rock will be durable in the expected quality of water, when tested. The underdrain is constructed along the natural drainage way but not extended from the toe to head

of the fill. The condition of the existing underdrain is unknown. Additionally, the applicant's extent of the underdrain does not seem to correspond with that in the geotechnical report. The applicant has not proposed use of lateral drains. The applicant's geotechnical engineer should explain his choice for not extending the drain to the head new fill along the outslope of the existing refuse and elimination of lateral drains.

(2) Please provide the rationale and design parameters of standard geotechnical methods for the proposed underdrain.

(3) The applicant proposes to use eight inch rock which is available. The design rationale should indicate why the size rock may be justified. The consultant who designed the underdrain should certify all final drawings.

(4) The applicant will need to prove the underdrain rock meets this criteria before installation.

(c) Spoil handling involves transport, loading, and placement. In placement, the applicant should respond further to compaction to obtain the densities required by the stability analysis, and to avoid development of pore pressures. The applicant has not provided any special treatment for spon-com such as weathering nor any segregation of coarse to the slope side and fines to internal side of the pile. The applicant should describe installation of the underdrain showing how contamination of the underdrain will be avoided. Since the pile is free draining, the applicant should explain how piping will be avoided above the large rock in the underdrain without a filter.

(d) All diversions and benches used in conjunction with permanent diversion must be designed for 100yr-24hr event (new proposed rules 100yr-6hr).

(e) The applicant's bench designs, both in the Exhibit V, and as shown on the drawings, meet the grading requirements of less than 5%. The vertical distance between terraces is no more than 50 feet.

(f) Drainage, as designed and as proposed for construction, is not directed over the outslope of the fill, sedimentation of the benches over the long term is of concern.

(g) The outslope of the fill between benches is designed 2H:1V.

UMC 817.73 DISPOSAL OF UNDERGROUND DEVELOPMENT WASTE AND EXCESS
SPOIL: HEAD-OF-HOLLOW FILLS

(a) The final configuration of the fill will completely fill the disposal site to the ridgeline (pediment) which possibly makes it a head of hollow fill, however if the applicant should abandon coal mining prior to this time, the fill will be a valley fill.

(b) An underdrain per valley fill rules is proposed by the applicant in lieu of a rock-core chimney drain system, yet the applicant has not extended the underdrain head to toe in the new expansion, included lateral drains, addressed impounding in the west or east slurry cells, shown that the existing refuse underdrain meets the requirements, or expects to install monitoring wells to verify coarse refuse saturation.

(c) The underdrain system size should state the design flow and conditions assumed.

UMC 817.74 DISPOSAL OF UNDERGROUND DEVELOPMENT WASTE AND EXCESS
SPOIL: DURABLE ROCK FILLS

Not applicable

UMC 817.81 COAL PROCESSING WASTE BANKS: GENERAL REQUIREMENTS

(a) The disposal area has been addressed under UMC 817.71-.73 as applicable and UMC 817.82-.88. The applicant is utilizing standard disposal techniques to minimize spontaneous combustion potential: compaction, 4' topsoil, contemporaneous reclamation and the benches which break up the "long slope air drag effects". The applicant additionally states that the existing coarse refuse disposal site has not experienced problems with burning.

(b) The applicant has limited use of the expanded refuse disposal for disposal of coal processing waste or underground development waste to activities associated with the present or future Sunnyside Mines. If the applicant wishes to dispose of other wastes then a showing as required by this part will need to be made prior to such use.

UMC 817.82 COAL PROCESSING WASTE BANKS: SITE INSPECTION

(a) The applicant agrees to conduct inspections in accordance with these regulations. The person making these inspections will be a qualified registered engineer. The applicant has not identified another qualified person to be approved by this Division.

(b) The applicant agrees to disclose a potential hazard to the Division resulting from the inspection. The applicant has used the words "any potential hazard which is demonstrated to exist as a result of the required inspections". This wording seems contradictory since any potential hazard is only demonstrated by an accident that notification is hoped to prevent. What demonstration and by who is the applicant referring?

UMC 817.83 COAL PROCESSING WASTE BANKS: WATER CONTROL MEASURES

(a) The applicants underdrain, as shown, will intercept groundwater sources from the existing coarse refuse seep. The applicant underdrain is at the lowest point in the drainage and therefore should intercept any ground water flows from the refuse as long as the refuse is freedraining. The applicant has provided a filter for the 8 inch pipe but not for the rock portion of the underdrain. For compliance with other regulatory considerations the applicant has designed the pile contrary to part iii. The leachate sources from acid or toxic-forming coal processing waste will be from infiltration of surface water from the benches and top of the refuse pile during construction. Impoundment of leachate within or on top of the refuse may be contrary to the stability considerations. The applicant should indicate what quantities of infiltration after vegetation uptake, soil absorption and evaporation are expected after reclamation.

(b) The applicant has provided diversions for surface runoff around the pile.

(c) Slope protection is provided by the applicant maintaining a grade on the working surface away from the outslope. The benches also provide protection, preventing a long slope for water erosion. Contemporaneous reclamation of the slope as close behind construction will stabilize the slope, and it is recommended that topsoil only be spread during the planting season and be stabilized during vegetation establishment.

- (d) The applicant has addressed the expansion to comply with those sections concerned with discharges.

UMC 817.85 COAL PROCESSING WASTE BANKS: CONSTRUCTION REQUIREMENTS

- (a) The coal processing waste expansion has addressed compliance with UMC 817.71, 817.72, and 817.73.
- (b) The wastebank has a minimum long-term static factor of safety of 1.5.
- (c) The applicant will spread refuse in layers of 24 inches, however no justification in the operating plans to indicate that compaction of 90% maximum dry density or lesser if justified is assured.
- (d) The applicant has agreed to cover the refuse with 4 feet of non-toxic and non-combustible material until demonstrations from test plot allow a lesser cover per UMC 817.111-.117.

UMC 817.86 COAL PROCESSING WASTE BANKS: BURNING

The applicant has provided contingency fire plans on page 54 of his application but has not provided and shown approval by MSHA, the minimum provisions to ensure only those persons authorized by the operator, and who have an understanding of the procedure to be used, shall be involved in the extinguishing operation.

UMC 817.87 COAL PROCESSING WASTE BANKS: BURNED WASTE UTILIZATION

The applicant agrees not to remove waste from the refuse expansion area without submitting plans, however will remove waste if absolutely required to extinguish the fire. In which case the applicant should then be prepared to show this as the best alternative at the time.

UMC 817.88 COAL PROCESSING WASTE: RETURN TO UNDERGROUND WORKINGS

Not applicable

UMC 817.89 DISPOSAL OF NON-COAL WASTE

Applicant will not dispose of any materials in the coarse refuse expansion area except: underground development waste, coarse and dewatered fine coal processing waste and soil and other materials approved for use in reclamation.

UMC 817.91 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: GENERAL REQUIREMENTS

Prior to reactivating the west slurry cell, the applicant must show that the reactivation will not affect the stability and the intent of the refuse expansion area.

UMC 817.92 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: SITE PREPARATION

Not applicable.

UMC 817.93 COAL PROCESSING WASTE: DAMS AND EMBANKMENTS: DESIGN AND CONSTRUCTION

Not applicable.

UMC 817.95 AIR RESOURCES PROTECTION

The applicant will comply with the same provisions for the expansion as contained in the approved Sunnyside Permit fugitive dust control plan. The applicant should include any provisions of the State Air Quality Permit or PSD required for this site in the plans. The applicant must show all approvals for Federal, County and State Air Quality before final approval and construction.

The applicant lists the control measures as: Haul Road Dust Control (watering), Pile Compaction, and Contemporaneous reclamation.

UMC 817.97 PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

No Comments

UMC 817.99 SLIDES AND OTHER DAMAGE

The applicant shall notify the Division by the fastest means possible if a slide, failure or other damage such as a fire occurs adjacent or in the in the coarse refuse.

UMC 817.100 CONTEMPORANEOUS RECLAMATION

The applicant shall be required to topsoil and revegetate the slope and bench adjacent and below the establishment of each new bench as the planting season allows opportunity.

Once reclamation has taken place the applicant should avoid any disturbance of reclaimed from directing water with refuse sediment or refuse construction except as required for reclamation maintenance and repair.

UMC 817.101 BACKFILLING AND GRADING: GENERAL REQUIREMENTS

(a) The applicant should provide a timetable as practical based on quantities of refuse. For instance once a bench level is reached (1) berm is established, (2) slope and lower bench are recompacted, (3) a scraper then strips and distributes the first two feet of topsoil (4) The first two feet are compacted etc.

(b-1) The area of the refuse is a place where the settled fill has become stabilized and the outslope is reclaimed, the site is constructed to minimize the acid toxic effluent, postmining land use will be established, the pile meets a minimum static factor of safety of 1.5 and the pile should blend into the natural surroundings.

(b-2) The applicant will minimize adverse effects.

(b-3) The postmining graded slopes are shown.

(b-4) Cut and fill terraces only apply to old refuse haul road. The applicant must commit to reclamation of the cut and fill terraces by backfill, topsoil and revegetation or justify why not?

(b-5) The applicant intends to use refuse for roadbase and surfacing on the haul roads. This can only be allowed on cut and fill terraces if all refuse is retained on the solid portion of the new benches and sediment from the road is not allowed to accumulate below the relief culverts. Sediment control of the relief culverts would be required.

(6) Small depressions may be constructed for erosion, conserve soil moisture or promote vegetation, do not restrict normal access and are not allowed to affect stability of outslopes.

(7) The applicant should show the method and equipment that will be used to final grade of refuse and later topsoil will be accomplished along contour on the 2H:1V outslopes.

(8) Retention of highwalls are not allowed in the refuse area.

(c) No material other than durable rock constructed as an engineered fill will be allowed (other than existing and already approved) on a steep slope (20 degrees) or steeper.

UMC 817.103 BACKFILLING AND GRADING: COVERING COAL AND ACID- AND TOXIC- FORMING MATERIALS.

(a) The materials represented by the applicant to buried in the refuse disposal area that may be slightly acid- or toxic forming should be described regarding acidity and toxicity. Should materials become more acid and toxic than materials represented during the life of the refuse pile, the applicant must notify the Division of the change and present plans which will minimize impacts of these materials

UMC 817.106 REGRADING OR STABILIZING RILLS AND GULLIES

The applicant will fill, grade and stabilize any rills or gullies in the regraded and topsoiled areas.

UMC 817.111 REVEGETATION: GENERAL REQUIREMENTS

No Comment

UMC 817.112 REVEGETATION: USE OF INTRODUCED SPECIES

No Comment

UMC 817.113 REVEGETATION: TIMING

(a) Since seeding and planting of disturbed areas shall be conducted immediately after final site preparation and during the first normal period for planting, the applicant should time topsoil distribution and preparation with normal planting seasons.

(b) The applicant shall plant to effectively control erosion as contemporaneously as practical.

UMC 817.114 REVEGETATION: MULCHING AND OTHER SOIL STABILIZING PRACTICES.

No comment

UMC 817.115 REVEGETATION: GRAZING

The applicant does not expect any grazing until bond release. However, since the property is controlled by Kaiser, the applicant should seek approval from the Division prior to allowing grazing.

UMC 817.115 REVEGETATION: STANDARDS FOR SUCCESS

No comment

UMC 817.117 REVEGETATION: TREE AND SHRUB STOCKING FOR FOREST LAND

No comment

UMC 817.121 SUBSIDENCE CONTROL: GENERAL REQUIREMENTS

Not applicable

UMC 817.122 SUBSIDENCE CONTROL: PUBLIC NOTICE

Not applicable

UMC 817.124 SUBSIDENCE CONTROL: SURFACE OWNER CONTROL

Not applicable

UMC 817.126 SUBSIDENCE CONTROL: BUFFER ZONES

Not applicable

UMC 817.131 CESSATION OF OPERATIONS: TEMPORARY

Prior to temporary cessation of operations, the applicant should submit a plan to secure surface facilities since the reclamation plan submitted only addresses final reclamation.

UMC 817.132 CESSATION OF OPERATIONS: PERMANENT

The applicant will reclaim all the disposal site upon permanent abandonment in accordance with the reclamation plan and performance standard rules.

UMC 817.133 POSTMINING LAND USE

The applicant's intent in the plans submitted are to reclaim the land to premining use. If provisions of the approved plan are met the should meet comply with this section.

UMC 817.150 ROADS: CLASS I: GENERAL

(a) The applicant has addressed the parameters for Class I roads in the permit application. The coarse refuse road designated R1 has been previously approved in the Sunnyside Permit and therefore only the extension is of concern. The extension of this road will be totally in the refuse disposal area and the applicant will extend the road in accordance with the rules and permit.

The old coarse refuse road, according to this application, is a pre-law refuse road and the applicant wishes to reactivate this road without upgrading the design to exact Class I Standards. The applicant does state that the road will be restored per the approved Sunnyside Mines Permit Application.

(b) The applicant wishes to use coarse refuse as surfacing for this road, however to minimize additional contributions of suspended solids the applicant shall provide sediment control plans for this road. The applicant is not complying with UMC 817.154 in utilizing refuse, and UMC 817.153 concerning culvert spacing, where the road is not located per UMC 817.152(d-13). Also the refuse will be carried as sediment through the culverts to the downslope of the embankments in violation of UMC 817.81(a) and UMC 817.101(c).

(c) Where plans in the existing approved permit apply to restoration of this old coarse refuse road do not strictly comply with UMC 817.156, the applicant should address how restoration of this road will result in the intent of the this part.

(d) New certification by a registered professional engineer is required prior to approval of this permit revision showing that the design of the existing road has incorporated the items in part d-2 of this part and complied with all provisions of the approval to use refuse per all Board Orders and subsequent agreements. The applicant indicates reactivation includes some construction of the road. The applicant must submit detailed plans for this construction showing changes anticipated along its length.

UMC 817.151 ROADS: CLASS I: LOCATION

(a) The alignment of the existing old coarse refuse road is established and any realignment of the road on a cut and fill slope would create additional disturbance. The stability of the road is somewhat indicated by its present condition. The applicant should report any unstable existing conditions. The road crosses no streams.

(b) Not applicable

(c) Not applicable

(d) Not applicable

UMC 817.152 ROADS: CLASS I: DESIGN AND CONSTRUCTION

(a-1) Overall grade is 4% less than rules of 10%.

(a-2) The maximum pitch grade is 7%, less than rules of 15%.

(a-3) Maximum grade does not exceed 10%.

(b-1) Consistent with need and originally built for refuse haulage.

(c-1) Cut slopes are stated to be approximately 1.5H:1V, since the road is already built and the applicant states are stable. The applicant should certify any areas steeper than 1.5H:1V meet a 1.5 factor of safety.

(c-2) Applicant should state what materials compose fill slopes and certify any areas of the fill slopes steeper than the "approximate" 1.5H:1V meet a factor of safety of 1.5.

(c-3) If construction is planned applicant shall implement temporary erosion control measures.

(d) The applicant has presented a generalized cross-section. Does this cross-section represent the minimum dimensions to be used? Will the road be reconstructed to meet these minimum dimensions? The applicant shall show that any new construction will comply with this section.

UMC 817.153 ROADS: CLASS I: DRAINAGE

(a) The applicant should present details for sediment control measures to be used on the road pursuant to the sediment control required for the other roads where coarse refuse is used as surfacing.

(b) The generalized cross-section appears to comply with this section however, drainage ditches at the toe of all out slopes are not provided.

(c) The applicant has stated that spacing of culverts do not meet these requirements, however the applicant should state whether the size, trash racks, etc. of the culverts meet these requirements.

(d) Not applicable

UMC 817.154 ROADS: CLASS I: SURFACING

Materials shown as acid or toxic forming should not be used on the road, it is not clear that the applicants present allowance to use coarse refuse allows for toxic or acid forming materials. Along with the allowance to use of coarse refuse on existing roads, the applicant has agreed to provide sediment control. Please show the sediment control that will be used to avoid plumbs of refuse sediment from accumulating below the relief culverts.

UMC 817.155 ROADS: CLASS I: MAINTENANCE

Nothing in the applicants plans shall be construed to relieve the applicant from complying with these maintenance standards.

UMC 817.156 ROADS: CLASS I: RESTORATION

(a) The applicants existing permit does state some roads will be left for access for grazing. Unless the applicant can demonstrate that this road is need and directly serves a post mining grazing land use, the applicant shall agree to reclaim this road. Unless the applicant states otherwise all requirements of restoration shall be required including removal of surfacing material. The applicant should provide a typical reclaimed cross section of the road.

UMC 817.181 SUPPORT FACILITIES AND UTILITY INSTALLATIONS

The applicant shall show describe any support facilities proposed for the refuse disposal area including any possible power lines.

The applicant shall describe any utilities etc which pass over or under the permit area or state that none exist. The applicant shall describe any potential damage, destruction or disruption that could apply to the railroad.

END