



September 8, 2000

Incoming
ACT/015/018

Utah Coal Program
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Attn: Daron Haddock

Subject: Response to Deficiencies in the Revised Reclamation Plan - Round Two, PacifiCorp, Deer Creek Mine, ACT/015/018-99C, File #3, Emery County, Utah

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, hereby submits round two responses to the deficiencies of the revised Deer Creek reclamation plan. The revised plan was initially submitted in May, 1999. PacifiCorp received the first round of deficiencies in the document dated July 7, 1999. Response to the findings was to be completed by August 9, 1999. Because of the extent of the deficiencies, PacifiCorp requested an extension to the response deadline on August 8, 1999. The Division granted the extension request until October 8, 1999.

PacifiCorp again requested an extension to respond to the deficiencies in a letter dated September 30, 1999. This request solicited permission to extend the response period until the end of the year. The Division responded and gave PacifiCorp until December 8, 1999 to resubmit the revised plan. The first round of responses were hand delivered to the Division on December 6, 1999. On May 13, 2000, PacifiCorp received the second round of deficiencies of the Deer Creek revised reclamation plan.

The attached document attempts to answer the second round of deficiencies in the order they were received beginning with Operation Plan and ending with Bonding and Insurance Requirements. The Division's second round of findings will be first listed by regulation and explanation. PacifiCorp will follow by a response in *italics*.

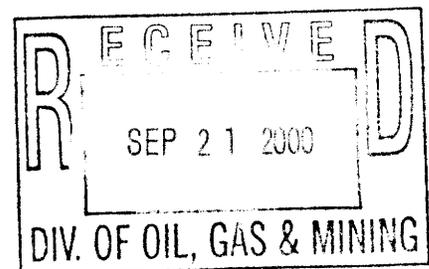
Accompanied with this letter are two (2) copies of the reclamation plan for your Round Three Review process. If you have any questions or concerns regarding this document, please contact myself at (435) 687-4720 or Dennis Oakley at (435) 687-4825.

Sincerely,

Dennis Oakley
for Chuck Semborski
Permitting/Geology Supervisor

Enclosure: Response to Technical Analysis Deficiencies - Round Two

Cc: Carl Pollastro
Chuck Semborski
Dennis Oakley
File



Huntington Office:
(801) 687-9821
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(801) 381-2317
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Response to Technical Analysis Deficiencies - Round Two

The following responses to deficiencies are formatted as found in the technical analysis document. They are broken down into logical section headings similar to the R645 regulations. In each section, the regulation number along with the associated deficiency is followed by the permittee's italicized response.

Operation Plan

Topsoil and subsoil

R645-301-130, All soil survey work, field sample collecting, and data interpretation must be performed by a qualified Soil Scientist. Sufficient information must be submitted with the amendment to enable the Division to determine the qualifications of the person conducting the soil survey and interpreting the results.

Nowhere in the R645 regulations can the permittee find that soil sampling must be conducted by a Certified Soil Scientist. R645-301-130 states that technical analysis will be planned by or under the direction of a professional qualified in the subject to be analyzed. All soil samples collected by PacifiCorp employees are sent to a certified laboratory where they are analyzed and reported by professional soils personnel. However, the Division and PacifiCorp came to an agreement to place a statement in the permit stating that soil sampling will be conducted by a qualified person. This statement is reflected in R645-301-200, page 1, highlighted text.

R645-301-120, R645-301-224 and R645-301-233, (Part 1) For substitute topsoil and refuse characterization, include all analyses listed in Table 2, Overburden Evaluation for Vegetative Root Zone, Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining (Leatherwood, 1988). The sampling plan only provides for pH and EC analysis for substitute topsoil characterization. Analyses of refuse does include saturation percent, available water capacity nor rock fragments. (Part 2) Sampling as listed in Table 200-A-1 did not follow the current 1998 Division guidelines for topsoil and overburden. Furthermore, Table 200-A-1 contains erroneous calculations and information for SAR, units, and texture. Therefore, information in Table 200-A-1 is incomplete and erroneous as contained in the amendment and does not show that the fill or refuse materials in Deer Creek and Elk canyons are suitable for achieving the revegetation standards. (Part 3) No analysis results from the November 1999 sampling are included in Table 200-A-2.

Part 1) Soil sampling of the cores taken during slope stability investigations were used for a sampling medium. Results and locations of the samples taken are presented in Appendix R645-301-200-C. These results reveal that the soil throughout the Deer Creek Mine site has problem with high SAR and Selenium values in the locations sampled. The elevated SAR values are probably attributed to wintertime salt applications. This is a

problem that could be dealt with rather easily. However, the elevated Selenium values will be more difficult to deal with.

The surface facility area was built on the material that is cut from the terraces above the mine. Soil sample analyses from the terraces (Appendix R645-301-200-D) reveal no unacceptable selenium values. The reason is unclear why selenium toxicity would show up in the current analyses. Further sampling of the surface facility area is needed before a final quality determination of the material is made. Refer to R645-301-233 (highlighted text) for a description of the exploration/sampling program.

PacifiCorp suggests also that a test plot of vegetation which will uptake the Selenium be studied while the mine is still in operation. The test plot study would be in cooperation with the NRCS and DOGM. Data would be published annually and the results could be used to determine if a successful vegetal stand within the disturbed area of the Deer Creek Mine is possible using the available material.

PacifiCorp has committed in R645-301-200 to find a suitable soil substitute material for vegetation establishment. This includes a borrow pit, although, PacifiCorp feels this is not a economically feasible alternative. The Division needs to allow PacifiCorp the flexibility to find the most practical, economically feasible, successful alternatives to meet the performance standards for the Deer Creek Mine.

Part 2) Table 200-A-1 has been removed from the reclamation plan.

Part 3) The terrace reclamation project will no longer be associated with the Deer Creek Mine reclamation project. Therefore all information (with the exception of the soil sample analysis) relating to this project has been removed from the plan.

R645-301-120 and R645-301-521, The refuse sampling plan refers to Map 2-17. Map 2-17 could not be located in the amendment nor in the existing Mine Reclamation Plan.

At the time of the second reclamation plan submittal, Map 2-17 from the current MRP had been revised to include sample sites and current surface facility information. The map was referenced by the revised reclamation plan but was pending approval by the Division. Since that time, the revised map was pulled from the Divisions review process. To remedy this problem, a sample location map has been incorporated into Appendix R645-301-200-D. Any mention of Map 2-17 in the revised reclamation plan has been removed.

R645-301-553.252, For the refuse sampling plan, sample density must be statistically based, using a random sample grid pattern to accurately represent and characterize the refuse piles.

*Sampling of the refuse pile has been completed and found problems with quality of the material as outlined above in **R645-301-120, R645-301-224 and R645-301-233**. PacifiCorp has also committed to finding a suitable soil substitute (barrow pit) for vegetation growth if low risk alternatives could not be found. The Division must realize that the area of somewhat toxic soil material covers approximately 5 to 6 acres. This is*

a large area to cover with 4 feet of non-toxic material and an economically impossible alternative. PacifiCorp realizes, though, vegetation performance standards must be met.

Approximate Original Contour Restoration

R645-301-553.500 and R645-301-553.600, The permittee must demonstrate that the reclamation plan will eliminate all highwall to the extent practical. If highwall remnants are to be left then the permittee must show that 1) the amount of fill material is insufficient to reclaim the highwalls, or 2) highwall elimination would interfere with reestablishing the drainage system, or 3) highwall elimination would result in slopes that do not meet the stability requirements.

The Deer Creek Mine is defined as a Continuously Mined Area (CMA), therefore, R645-301-553.600 applies. The volume of spoil (as defined) is not adequate to completely cover the remaining highwalls. No spoil material was ever salvaged during the construction of the surface facilities at the Deer Creek Mine. Highwall remnants will remain as indicated on maps DS-1782-D and DS-1783-D 1 of 2 and 2 of 2.

R645-301-537, Since the permittee plans to disturb the refuse pile during final reclamation they must remove references to using the settle and regraded fill provision from achieving AOC.

There are no references to settled and regraded fills mentioned in the revised reclamation plan.

Backfilling and Grading

R645-301-552.130, The permittee must give the Division detailed calculation for the slope stability analysis.

A slope stability analysis was performed at the Deer Creek Mine during the month of April. The collected data has been incorporated in the revised reclamation plan Appendix R645-301-500-E.

R645-301-537, The permittee must remove the reference to settled and revegetated fill being left since the backfilling and regrading plan shows that all settled and revegetated fill will be disturbed during final reclamation.

There are no references to settled and revegetated fills mentioned in the revised reclamation plan.

R645-301-553.300, The permittee must show how the requirements of R645-301-553.300 will be met. That regulation requires that all coal seams and acid- and toxic-forming materials will be adequately covered to control surface impact or contaminate

surface or groundwater. The Division is concerned about the exposed coal seams that are located next to the disturbed area boundaries shown on Map DS1796D sheet 1 of 2 will be covered.

The referenced map is titled Deer Creek Mine, Pre-Reclamation Contours. This map illustrates the topography of the Deer Creek surface disturbed areas prior to reclamation. This map should not be used to determine post reclamation topography.

For post reclamation topography of the area in question, refer to maps DS-1782-D and DS-1783-D, 1 of 2. In reviewing these maps, the Division should note that no exposed coal seams exist. The coal seam will be adequately covered with the required non-toxic and non-combustible materials. PacifiCorp has satisfactorily complied with this regulation.

R645-301-553.140, the permittee did not show how erosion and water pollution would be minimized. The proposed slopes are straight rather than concave. Concaved slopes tend to minimize erosion more that straight slopes.

PacifiCorp has repeatedly covered how erosion and water pollution would be minimized throughout the revised reclamation plan; R645-301-200, pg. 2-1; R645-301-500, pg 5-7, 8, 10, 11, 12; and R645-301-700, pgs. 7-1 through 7-5 extensively covers the BTCA methods used to minimize erosion. The program RUSLE is used to model sediment transport and compares background sediment to disturbed area sediment quantities. PacifiCorp has gone to great lengths to describe in detail how erosion and water pollution will be minimized and monitored. By using deep gouging methods to control runoff (enhancing infiltration) combined with the incorporation of a straw mulch, litter, tackifier, etc., PacifiCorp has satisfied R645-301-553.140.

Mine Openings

R645-301-551, The permittee must give the Division portal closure plans for North Fork Meetinghouse Canyon.

As mentioned in R645-301-500 of the revised reclamation plan, beginning on page 5-2, PacifiCorp is fully committed to supplying a portal closure plan for the two North Fork Meetinghouse Canyon portals. This plan will be introduced as a separate amendment and, when approved, placed in Appendix R645-301-500-B. It is our intent to submit this plan prior to calculating reclamation bond amounts for the Deer Creek Mine.

Topsoil and Subsoil

R645-301-553.252 and R645-301-233, Since data errors exist, data is incomplete, and roof and floor analysis identify toxicity, the Division cannot make a determination of coal waste and refuse acceptability. (1) All refuse and coal mine waste must be covered

with a minimum of four feet of the best available, nontoxic and noncombustible material. (2) Refuse may not be used as substitute topsoil.

As mentioned above, soil analysis of the refuse piles in Deer Creek and Elk canyons found quality problems with the soil that was sampled during the slope stability analysis. Shallow areas (i.e. depths from 5 to 7 feet) revealed high Sodium and Selenium values. The Sodium caused SAR values to exceed acceptable limits. Unacceptable Selenium values were found throughout the sampling depths.

Selenium was not only found in refuse piles, but also in the native fill material. Other alternatives, other than borrow pits, are needed that approach this problem scientifically. PacifiCorp commits to scientifically approach the soil quality problem at the Deer Creek Mine looking for better alternatives to meet vegetation performance standards. Three alternatives are given in R645-301-200: Soils

R645-301-120, Table 3-1, Reclamation Schedule, and Section R645-301-541 General, do not list soil exploration/sampling and salvage; nor does the table list soil replacement.

The revised reclamation plan has been changed to conduct the exploration/sampling program while the mine is still in operation. Table 3-1 will remain unchanged.

R645-301-232.720 and R645-301-350, the exploration program assumes that adequate quantities of substitute soil is available, but gives no estimated volumes and cover depths for the reclaimed site. The application needs to contain a commitment to develop a backup plan supplying borrow soils if adequate quantities of substitute soils cannot be procured on-site.

Adequate fill material is available for eliminating highwalls as practically as possible. However, quality of this material is questionable. Pages 1- 2 of R645-301-200: Soils commits to locating a borrow pit to import soil material of the quality and quantity necessary to achieve such revegetation standards if the sampling program or test plot investigations fail to located an adequate suitable source.

R645-301-120 and R645-301-244, The soil commitment to apply tackifier mainly on slopes greater than 20% appears to be in conflict with the biology commitment to apply tackifier where ever straw mulch is used to stabilized all soil surfaces.

This conflict is remedied in Section R645-301-244: Soil Stabilization. The second paragraph is replaced with the following; "As described in R645-301-300: Biology, all reclaimed slopes will be covered with a noxious weed free mulch and tackifier to stabilize the soil".

Hydrologic Information

R645-301-731, Provide a monitoring plan specific to reclamation that: 1) includes water quality and quantity monitoring, where flow accumulation is measurable, as determined by with the spring survey to be conducted in the 5th and 9th year following reclamation, 2) demonstrates mine water discharge will meet the criterial for water quality appropriate for the post-mining land use and in accordance with the state and federal standards (For Huntington Creek and tributaries the state standards are: Class 2B, Class 3C and Class 4 criteria), 3) commits to submit the water quality and quantity data quarterly.

An amendment to Volume 9 Hydrologic Section: Appendix A was submitted on August 25, 2000. PacifiCorp revised this section to include reclamation a monitoring plan for surface and ground waters.

R645-301-731.221, Provide a monitoring plan specific to reclamation that: 1) assures impacts to hydrologic balance are prevented, 2) clarifies how underground water recovery will be determined from the monitoring of HM-2 and HM-3, 3) describes how the State Water Quality Standards, Utah Administrative Code R317-8, for the Deer Creek, Huntington Creek, and any other stream receiving minewater discharge will be shown to meet federal and state water quality standards. (The Division recommends a minimum high and low flow season monitoring for selected parameters over the full period of reclamation. Parameters should be reflective of all potential in-mine contaminants), 4) includes a map that differentiates between alluvial and groundwater gradients and identifies; flow direction and groundwater divides in the permit and adjacent area for each mined seam, existing mine floor elevations, in-mine discharge locations, pertinent geologic controls, mine controls such as sealed mine sections, and changes to previously existing hydrologic barriers, 5) provides a water monitoring plan that; a) determines whether changes in groundwater hydrology will occur along the Straight Canyon Syncline during the time mining has idled, b) determines if the groundwater hydrology changes affects baseflows to the Cottonwood Canyon Stream, c) identifies the difference between changes due to climate, or from ground water discharge by including age dating to be conducted every 2nd year during the low flow period for; radio carbon dating, tritium dating, and stable hydrogen and oxygen isotopes (for meteoric waterline determinations) in the Cottonwood Canyon wells and Cottonwood Creek streamflow below well CCCW-1S and d) identifies all reclamation monitoring sites on a map.

Please refer to the cover letter dated August 25, 2000, Revised Volume 9 Hydrologic Section, PacifiCorp, Des-Bee-Dove Mines, ACT/015/017, Deer Creek Mine, ACT/015/018, Cottonwood Mine, ACT/015/019. This document thoroughly responds to this deficiency.

R645-301-742.314, 1) Provides designs for the channel transitions between the upstream and downstream natural channel and the reclaimed channel, and for the proposed soft bio-engineering methods, 2) demonstrate the design capacity for perennial and intermittent streams are at least equal to the unmodified channel upstream and downstream from the diversion.

1) Design for channel transition has been incorporated in Appendix R645-301-700-B. Channel transition has been designed to protect banks, protect reclaimed channels, and to dissipate high flow energy.

2) Volume 9, pages 104 classifies the Deer Creek channel as ephemeral in which case design criteria would be covered by R645-301-742.330 of the Utah coal regulations. However, the reclaimed reach of this channel is designed to safely pass a 100 yr/6 hr event, which are the requirements of R645-301-742.320 of the Utah regulations covering perennial and intermittent streams. Therefore, PacifiCorp contends that the design of the reclaimed channel far exceeds the requirements of the Utah regulations and would be greater than the capacity of the unmodified channel upstream and downstream.

R645-301-512, Provide certified designs: hydrologic designs can be certified in a cover page attached to the designs.

A PE certified cover page has been placed at the beginning of R645-301-700: Hydrology.

R645-301-742, Provide specific information, maps, design detail, and maintenance information for the silt fences and other sediment control measures and include a maintenance plan and commitments to assure BTCA measures are functioning during the reclamation period. Note: no treatment was provided for areas going to the undisturbed culvert during reclamation, pages 7-1 and 7-2.

A typical drawing of sediment control structures that will be utilized during reclamation operations is found in Appendix R645-301-700-B, Figure 7-4A. It is required to maintain these structures in accordance to the R645 Utah Coal Regulations. PacifiCorp contends that it would be redundant to repeat the requirements of the R645 Utah Coal Regulations within the text of the Deer Creek reclamation plan.

R645-301-512.200, Correct or provide the following: 1) the K-factor used in Table 7-4 should be the same as the K-factor identified within the text, 2) correct the calculation errors in table 7-4, 3) present the calculations and assumptions used to determine the K-factor within the disturbed area, 4) present the calculations and assumptions used to determine manning's 'n' for the riprap channel design.

- 1) *The value in the text (0.86) was a typo. The value has been corrected to read 0.086. The highlighted page is included with this response.*
- 2) *The calculations in Table 7-1a were also a typo. The values have been corrected. Highlighted pages are included with this response.*
- 3) *The Revised Universal Soil Loss Equation (RUSLE) program has been included in Appendix R645-301-700-C. This program is installed on a 3.5" floppy disk and included all files used to calculate sediment loss at the Deer Creek Mine disturbed and undisturbed areas.*
- 4) *A paragraph has been inserted to explain how the roughness coefficient "n" was calculated. Refer to the highlighted text on page 7-11 in R645-301-700: Hydrology. Unlined channel segments used adjusted "n" values taken from the Stream Corridor Restoration document prepared by the Federal Interagency Stream Restoration Working Group. This adjustment method is found on pages 7-19 through 7-22 of the referred document.*

Revegetation

R645-301-341.250, The applicant needs to clarify the woody plant density success standard. It is not clear if the applicant intends to use baseline information or reference area data at the time of seeking final bond release. If the applicant intends to use data gathered at the time of seeking bond release, the applicant need to indicate the standard would need to be approved at that time by the Division of Wildlife Resources and the Division.

It is the intent of PacifiCorp to set the standard of success at the time of bond release. The revised reclamation plan has been updated to make this point clear. Refer to R645-301-300: Biology in the revised reclamation plan.

R645-301-341.250, The diversity standard proposed in the application is not acceptable. The applicant needs to propose a different method of measuring diversity and a success standard.

Historically, PacifiCorp has contracted all vegetation monitoring to a private entity. Since it is unknown whether the monitoring will be conducted in-house or contracted out in the future, PacifiCorp commits to using one of the similarity indices found in the Division's Vegetation Guidelines, Appendix B. A statement has also been added that if another similarity index is used, the method will be approved by the Division. Refer to R645-301-300: Biology in the revised reclamation plan.

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Utah Division of Oil, Gas, and Mining
Coal Division
May 23, 2000
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Bonding and Insurance Requirements

R645-301-130, The permittee did not include a detailed reclamation cost estimate in the amendment. The permittee informed the Division that the reclamation cost estimate would not be submitted until the reclamation plan was approved. The Division agreed to that procedure. Prior to final approval the permittee must submit a detailed reclamation cost estimate.

PacifiCorp is committed to this procedure.

APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/015/018
Title of Proposal: Amendment to Revise Deer Creek Reclamation Plan, PacifiCorp, Deer Creek Mine, ACT/015/018, Emery County, Utah						Mine: DEER CREEK
						Permittee: PACIFICORP

Description, include reason for application and timing required to implement: This is a totally revised reclamation plan for the Deer Creek Mine.

Instructions: If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

Attach 3 complete copies of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, and obligations, herein. (R645-301-123)

Charles A. Semborski Charles A. Semborski - Geology/Permitting Supervisor 9/7/2000
Signed - Name - Position - Date

Subscribed and sworn to before me this 7th day of August, 2000.

Lori Ann Anderson
Notary Public
My Commission Expires: December 22, 2001
Attest: STATE OF Utah COUNTY OF Emery

Received by Oil, Gas & Mining

R E C E I V E D

SEP 21 2000

DIV. OF OIL, GAS & MINING

ASSIGNED TRACKING NUMBER

