Attachment 2.05.4(2)(e) - 11
NRCS Letter with Recommended Procedures for Soil Preparation, Seeding and Management

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
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June 30, 2010

Division of Reclamation, Mining and Safety
Department of Natural Resources
1313 Sherman St., Room 215
Denver, CO 80203

Re: Revised Section for Permit Revision #6 (Attached) as of June 2010.

Dear Concerned Parties:

I have reviewed the soil reclamation and re-vegetation practices listed in the attached revised section for Permit Revision#6 (as of June 2010) for the New Horizon Mine, Nucla, Colorado. I am in support of the practices listed in their detail.

If you have any questions or need further clarification of NRCS recommendations regarding this permit revision, please contact me.

Sincerely,

Jim Boyd

Jim Boyd, NRCS Resource Conservationist

-attachement

cc. Western Fuels-Colorado
Greg Lewicki and Associates

Topsoil Preparation Procedures

13.1 Irrigated Cropland (Prime farmland) Topsoil Preparation Procedures

Topsoil replacement operations may be carried out during most of the year, the exception being those periods when wet conditions would preclude handling of the topsoil materials.

1- Ripping - Prior to replacement of topsoil, the graded spoil (Bench 1 material) will be ripped to reduce compaction. This will be done to a depth of 2 feet. This will be done by dozer with rippers or a chisel plow. Where the Bench 1 material is used as suitable subsoil, on the east side of the Morgan property, ripping will occur to a depth of 4 feet and cross ripping will be employed. The 4 feet of ripping with cross ripping will also be used in any area of irrigated Cropland where heavy traffic has also occurred. Upon placement of the Lift B subsoil, this material will also be ripped after placement to a depth of 24-30 inches, depending on the depth of the soil placement.

2 - Land leveling - WFC uses a blade of 16' to 24' width pulled behind a farm tractor to level the topsoil surface and allow a smoother surface for seeding.

3 -Rock picking - WFC will use a mechanical device such as a Vermeer rock picker that is pulled behind a tractor that rakes up large rocks over approximately 2.5 inches in diameter. Rocks up to approximately 24" diameter can be picked up by the device, although there should be no rocks of this size in the topsoil. The rocks are removed from the field.

4 - Fertility testing - This test is conducted within 3 months of topsoil placement. Three soil samples will be obtained from the top 2 feet of soil in the field to be tested. The field is basically defined as that area that has recently been topsoiled. Samples will be taken and analyzed by a lab using the standard soil test for pH, salts, organic matter, nitrogen, potassium, and phosphorous. The lab will be informed that the desired crop is alfalfa and that the desired 1st cut production is 2.00 tons per acre.

5 - Disking and chisel plowing - Prior to final seedbed preparation, soil conditioning and weed control tillage will be carried out through the use of chisel plowing and/or disking. Chisel

plowing will relieve any topsoil compaction, will aid in controlling weedy species, and will leave the site in a temporary toughened condition reducing wind and water erosion potential. Disking will be used to condition soil, break up clods, and control weeds through tillage prior to seeding. If annual weeds are a problem, several tillage operations may be required to get adequate control.

6. Final Seedbed Preparation -(For sideroll irrigated areas) Harrowing and cultipacking prior to seeding will be conducted as needed in order to provide the smooth, firm seedbed required. In any areas that may be poorly drained, tillage will be timed in order to reduce bogging, excessive compaction and excessive cloddiness caused by tillage when soils are wet. The best period for tillage in these areas may be in the early spring prior to the irrigation season (prior to mid-April). (For flood irrigated areas) - A plow pulling a standard marker will create furrows of approximately 4" to 6" depth on 30" centers, which is standard for the gated pipe used for the flood irrigation.

7. Initial Fertilizer Application - Based on the results of the fertility testing, fertilizer of the designed type will be applied at the rate specified from the lab testing. The fertilizer is in solid form and will be applied by small tractor with a broadcast spreader. The fertilizer will be applied in the Spring of the same year that the initial fertility testing is done. Ongoing fertility testing after initial seeding is described in Section 2.05.4(2)(e) Revegetation.

13.2 Reclaimed Irrigated Pastureland Topsoil Preparation Procedures

Topsoil replacement operations may be carried out during most of the year, the exception being those periods when wet conditions would preclude handling of the topsoil materials.

1- Ripping - Prior to replacement of the single lift topsoil, the graded spoil (Bench 1 material) will be ripped to reduce compaction. This will be done to a depth of 2 feet. This will be done by dozer with rippers or a chisel plow.

2 - Land leveling - WFC uses a blade of 16' to 24' width pulled behind a farm tractor to level the topsoil surface and allow a smoother surface for seeding.

3 -Rock picking - WFC will use a mechanical device such as a Vermeer rock picker that is pulled behind a tractor that rakes up large rocks over approximately 2.5 inches in diameter. Rocks up to approximately 24" diameter can be picked up by the device. The rocks are removed from the field.

4 - Fertility testing - This test is conducted within 3 months of topsoil placement. Three soil samples will be obtained from the top 2 feet of soil in the field to be tested. The field is basically defined as that area that has recently been topsoiled. Samples will be taken and analyzed by a lab using the standard soil test for pH, salts, organic matter, nitrogen, potassium, and phosphorous. The lab will be informed that the desired crop is irrigated pasture grass mix and that the desired 1st cut production is 1.75 tons per acre.

5 - Disking and chisel plowing - Prior to final seedbed preparation, soil conditioning and weed control tillage will be carried out through the use of chisel plowing and/or disking. Chisel plowing will relieve any topsoil compaction, will aid in controlling weedy species, and will leave the site in a temporary toughened condition reducing wind and water erosion potential. Disking will be used to condition soil, break up clods, and control weeds through tillage prior to seeding. If annual weeds are a problem, several tillage operations may be required to get adequate control.

6. Final Seedbed Preparation -(For sideroll irrigated areas) Harrowing and cultipacking prior to seeding will be conducted as needed in order to provide the smooth, firm seedbed required. In

any areas that may be poorly drained, tillage will be timed in order to reduce bogging, excessive compaction and excessive cloddiness caused by tillage when soils are wet. The best period for tillage in these areas may be in the early spring prior to the irrigation season (prior to mid-April). (For flood irrigated areas) - A plow pulling a standard marker will create furrows of approximately 4" to 6" depth on 30" centers, which is standard for the gated pipe used for the flood irrigation.

7. Initial Fertilizer Application - Based on the results of the fertility testing, fertilizer of the designed type will be applied at the rate specified from the lab testing. The fertilizer is in solid form and will be applied by small tractor with a broadcast spreader. The fertilizer will be applied in the Spring of the same year that the initial fertility testing is done. Ongoing fertility testing after initial seeding is described in Section 2.05.4(2)(e) Revegetation.

13.3 Dryland Pasture Seedbed Topsoil Preparation Procedures

a) For areas less than 15% slope, where irrigation may be used in the future if water becomes available, the following procedures will be followed:

1- Ripping - Prior to replacement of the single lift topsoil, the graded spoil (Bench 1 material) will be ripped to reduce compaction. This will be done to a depth of 2 feet. This will be done by dozer with rippers or a chisel plow.

2 - Land leveling - WFC uses a blade of 16' to 24' width pulled behind a farm tractor to level the topsoil surface and allow a smoother surface for seeding.

3 -Rock picking - WFC will use a mechanical device such as a Vermeer rock picker that is pulled behind a tractor that rakes up large rocks over approximately 2.5 inches in diameter. Rocks up to approximately 24" diameter can be picked up by the device. The rocks are removed from the field.

4 - Fertility testing - This test is conducted within 3 months of topsoil placement. Three soil samples will be obtained from the top 2 feet of soil in the field to be tested. The field is basically defined as that area that has recently been topsoiled. Samples will be taken and analyzed by a

lab using the standard soil test for pH, salts, organic matter, nitrogen, potassium, and phosphorous. The lab will be informed that the land use is dryland pasture with a mixture of grasses and forbs.

5 - Disking and chisel plowing - Prior to final seedbed preparation, soil conditioning and weed control tillage will be carried out through the use of chisel plowing and disking. Chisel plowing will relieve any topsoil compaction, will aid in controlling weedy species, and will leave the site in a temporary toughened condition reducing wind and water erosion potential. Disking will be used to condition soil, break up clods, and control weeds through tillage prior to seeding. If annual weeds are a problem, several tillage operations may be required to get adequate control.

6. Final Seedbed Preparation - Harrowing and cultipacking prior to seeding will be conducted as needed in order to provide the smooth, firm seedbed required. In any areas that may be poorly drained, tillage will be timed in order to reduce bogging, excessive compaction and excessive cloddiness caused by tillage when soils are wet. The best period for tillage in these areas may be in the early spring prior to the irrigation season (prior to mid-April).

7. Initial Fertilizer Application - Based on the results of the fertility testing, fertilizer of the designed type will be applied at the rate specified from the lab testing. The fertilizer is in solid form and will be applied by small tractor with a broadcast spreader. The fertilizer will be applied in the Spring of the same year that the initial fertility testing is done. Ongoing fertility testing after initial seeding is described in Section 2.05.4(2)(e) Revegetation.

B) For areas greater than 15% slope, the following procedures will be followed:

1. Scarification - The single lift topsoil will be scarified (ripped) to its placement depth using a motor grader with rippers which will operate perpendicular to the slope, creating rough surfaces to trap moisture and prevent soil erosion along ths lope. An example of an area where this would be employed is the north edge of the Benson West, the Lloyd and the WFC property, where there is a significant steeper slope in these areas.

Seeding Procedures

4.4. Seeding Procedures - Reclaimed Irrigated Pastureland

The optimum seeding season for establishment of irrigated pasture is during the spring as early as soil moisture conditions allow for tillage and seeding operations. As a result of irrigation, seeding may be carried out as late as June 15. This will allow for a 100-120 day growing season, enough time to establish an adequate stand capable of over-wintering. During initial seeding of all reclaimed irrigated pasturelands (IP) with the permanent seed mix, an annual companion grain cover crop of oats or barley will be used at the rate of 40 lbs per acre. This will provide rapid growth so little topsoil is lost to erosion while at the same time providing some nitrogen and organic matter to the soil. This practice will help rejuvenate soils that have been in stockpiles for long periods of time. By implementing this practice, the practice of adding manure to these soils will not be implemented.

At times, the size or shape of the retopsoiled areas and shape of the reclaimed area in relation to a management unit may be insufficient to warrant establishment of the perennial irrigated pasture species initially. When this occurs, and the period before establishment of permanent irrigated pasture will extend beyond a year, Seed Mix #3 - Temporary Reclamation, will be used. This mix will provide interim stabilization as well as organic matter benefits when incorporated during tillage and seedbed preparation prior to seeding of the irrigated pasture seed mixes.

Seeding will be done either with a cultipacker type seeder or a drill equipped with double-disk openers, depth bands, and packer wheels. A cultipacker may be used behind the drill to also firm the seedbed. Either of these two types of seeding equipment will provide the greatest level of success in terms of proper seed placement and firming of the soil around the seed. Seeding depths are usually about 1/4 inch deep for the species to be seeded, and never more than ½ inch deep. If it is determined that the drill seeding method is not desirable for a particular area, then a broadcast seeder will be utilized to distribute the grass seed onto the surface of the ground. A large tractor mounted broadcaster having the capacity of holding several bushels of grass seed will be used and the tractor will traverse the field such that overlapping of the seed will occur. After the seed is broadcasted, a spring tooth harrow will be drug over the field to

bury the seed approximately 1/4 inch. Since not all of the seed will be covered, the seed rate will be increased 100% over the drilled seed rate. If the harrow is not utilized, such as in a topsoil stockpile situation, then the broadcast rate will be double the drilled rate.

Inter-seeding of Reclaimed Irrigated Pastureland (IP), may occur throughout the bond release period, as this is a normal husbandry practice. See letter on the following page from Jim Boyd, the local NRCS specialist, which substantiates this practice. Western Fuels may employ these practices during the reclamation period.

4.6 Liability Period Management - Reclaimed Irrigated Pastureland

Maintenance activities will include the normal monitoring for and repair of excessive rilling or gulling, weed and pest control. The rill and gully management and stabilization plan is detailed after the end of this section. Weed and pest control management will be conducted as necessary and in accordance with the plan described after the end of this section.

Grazing of the Reclaimed Irrigated Pastureland will not be considered during the first season in order to reduce trampling and pulling of the plants by livestock. Harvesting (mechanical) will be used to remove any significant growth during the first season. After the first season, and depending on the size of the management unit and availability of additional management units, grazing may be implemented in the winter. Harvesting will continue to be considered as a management option if grazing is not implemented in any given year. Harvested hay will be removed from the fields as rapidly as hay quality and weather conditions permit.

Grazing that occurs on the reclaimed lands will also be duplicated to the same degree and the same time on the Irrigated Pasture reference area.

As shown on the NRCS letter on the following page, interseeding is allowed in Reclaimed Irrigated Pastureland as a normal husbandry practice. This may be utilized during the liability period.

5.3 Seed Mix Information

Seed Mix #7 has been revised to contain alfalfa for the Irrigated Cropland. Triticale is included as a companion crop in Seed Mix #7 for cover in the any year that the seed mix is planted. The recommended alfalfa varieties have done well in the region (T. Doherty, personal communication, April 1988). This mix is to be applied to all Irrigated Croplands in the fall of Years 1 and 7. Initial seeding of the green manure crop occurs in the Spring of Year 1.

Prior to initial planting of seed mix #7, the 1st year for any reclaimed Irrigated Cropland area will utilize the Green Manure Crop Mix, as defined below:

Green Manure Crop Mix (Spring of 1st year for any reclaimed Irrigated Cropland)

Oats at the rate of 75 lbs per acre
Yellow Sweet Clover at the rate of 2 lbs/acre

Seed Mix #2 is used at the start of Year 7 to allow renovation of any alfalfa planted field in the fall of Year 7.

Seed Mix #2 - Year 7 Annual Small Grain Temporary Crop Mix (Spring planting)
Note: Any one, and only one of the 3 species can be planted at the rate shown.

SpeciesCommon Name	Seeding Rate
1. Barley*	75 lbs/acre
2. Spring Wheat *	75 lbs/acre
3. Oats*	75 lbs/acre

*Note: Species selection will be based upon land owner preference and availability of seed.

Seed Mix #7 - Irrigated Alfalfa Cropland Mix (IC) Land Use

Species Scientific Name	Common Name	Drilled Rate lbs. PLS/Acre*
1. Medicago sativa	Alfalfa	20
2.	Triticale	25

Note: Alfalfa seed must be inoculated with a specific strain of Rhizobium bacteria. The triticale will act as a companion cover crop whenever the planting of the alfalfa occurs in the fall.

Seed Mix #7 - Recommended Varieties

Alfalfa - Lahontan (Vernal, Ladak 65, Dawson or other recommended flemish varieties)*
The Morgans also would like to be able to use AV120 and SS120 alfalfa (Medicago Sativa) from Arkansas Valley Seed Company.
Other varieties may be used, upon approval with the landowner and the NRCS. New species may be developed which are better suited to these site conditions and soils.

5.4 Irrigated Cropland Seeding Procedures

The optimum seeding season for establishment of Irrigated Cropland (alfalfa) is in the late summer, around August 21, provided adequate irrigation water is available. This will allow for 6-8 weeks of growth, which is enough time to establish an adequate stand capable of over-wintering. During seeding of all Irrigated Croplands (IC) with the permanent seed mix, an annual companion grain cover crop of Triticale will be used at the rate of 40 lbs per acre. This will provide rapid growth so little topsoil is lost to erosion while at the same time providing some nitrogen and organic matter to the soil. This practice will help rejuvenate soils that have been in stockpiles for long periods of time.

At times, the size or shape of the retopsoiled areas and shape of the reclaimed area in relation to a management unit may be insufficient to warrant establishment of the perennial irrigated pasture species initially. When this occurs, and the period before establishment of permanent

irrigated pasture will extend beyond a year, Seed Mix #3 - Temporary Reclamation, will be used. This mix will provide interim stabilization as well as organic matter benefits when incorporated during tillage and seedbed preparation prior to seeding of the irrigated pasture seed mixes.

Seeding will be done either with a cultipacker type seeder or a drill equipped with double-disk openers, depth bands, and packer wheels. A cultipacker may be used behind the drill to also firm the seedbed. Either of these two types of seeding equipment will provide the greatest level of success in terms of proper seed placement and firming of the soil around the seed. Seeding depths are usually about 1/4 inch deep for the species to be seeded, and never more than ½ inch deep. If it is determined that the drill seeding method is not desirable for a particular area, then a broadcast seeder will be utilized to distribute the grass seed onto the surface of the ground. A large tractor mounted broadcaster having the capacity of holding several bushels of grass seed will be used and the tractor will traverse the field such that overlapping of the seed will occur. After the seed is broadcasted, a spring tooth harrow will be drug over the field to bury the seed approximately 1/4 inch. Since not all of the seed will be covered, the seed rate will be increased 100% over the drilled seed rate. If the harrow is not utilized, such as in a topsoil stockpile situation, then the broadcast rate will be double the drilled rate.

In order to manage the cropland fields properly, a sequence of operations over the liability period has been developed and is included in Subsection 5.7.1.

In this liability management period, re-plowing of cropland to restore the health of the fields, will occur during the bond release period, which is a normal husbandry practice. The initial use of a green manure crop in the 1st year is also essential since much of the topsoil will be placed from stockpiles that have been in place for a significant amount of time.

See letters in Attachment 2.05.4(2)(e)-11 from Jim Boyd, the local NRCS specialist, which substantiate these practices.

5.7 Irrigated Cropland - Liability Period Management

Irrigated Cropland will be managed to a high level due to the presence of prime farmland soils and water availability. The management of the irrigation system on the Morgan property will be performed by the Morgans themselves at WFC's expense. The Morgans will also receive all crops produced from their property in the permit area.

5.7.1 Management Sequence

The following narrative describes the sequence of steps for the revegetation process of Irrigated Cropland.

Year 1 - In Spring, place topsoil and conduct topsoil preparation and seedbed preparation according to Section 2.05.4 (2)(d). Also in Spring, seed green manure crop of oats which is to be seeded at the rate of 75 lbs/acre with yellow sweet clover at the rate of 2 lbs per acre, which will be drill seeded into the uncompacted topsoil. This seeding will be done during the time interval from April 15 to April 30. Allow green manure crop to grow during this irrigation season. Harvest the crop at the end of June. Soon after harvest, disk in the oat and yellow sweet clover stubble. The yellow sweet clover will help to add organic material to the soil and help it rejuvenate from the stockpiles. Around August 21 of this year, plant seed mix #7, which is 20 lbs per acre alfalfa and 40 lbs per acre triticale. Provide irrigation water to establish the crop before winter. This planting is recommended by the NRCS local office. See letter in Attachment 2.05.4(2)(e)-11.

Year 2-6 - Fertilize and irrigate the land, and harvest according to normal management procedures.

Year 6 - In Fall, plow down the alfalfa crop and let it sit over the winter.

Year 7 - Disk the soil using a disker to a depth of 24 inches, and plant Seed Mix #2 in the Spring. This is an annual small grain crop. Harvest the crop at the end of June. Soon after harvest, disk in the small grain stubble. Around August 21 of this year, plant seed mix #7 (using

a high yield variety), which is 20 lbs per acre alfalfa and 40 lbs per acre triticale. Provide irrigation water to establish the crop before winter.

Years 8-11- Irrigate the land and harvest according to normal management procedures.

Measure production for bond release during Years 9, 10 and 11.

5.7.2 Fertilization Plan

Fertilizer will be used at the New Horizon Mine during reclamation based on good, economical land management practices on Irrigated Cropland post mine land use. It is important to note that fertility testing and fertilization of the soil will occur when the topsoil is initially placed, which is discussed as a soil preparation practice in Section 2.05.4(2)(d). To achieve goal of high management for the irrigated cropland areas, the following fertilization plan is proposed after the 1st year:

1) Sampling of the soil on land with Irrigated Cropland post mine land use will take place in years 3, 5, 7 and 9 after seeding.
2) Three soil samples will be taken over each of the IC areas and analyzed by a lab using the standard soil test for organic matter, nitrogen, potassium, and phosphorous. The lab will be informed that the desired crop is alfalfa and that the desired 1st cut production is 2.00 tons per acre.
3) The lab will produce a recommendation for fertilizer based on soil samples and the recommended production of alfalfa.
4) The fertilizer is in solid form and will be purchased in bulk from the local Co-Op. It will be applied by small tractor with a broadcast spreader pulled behind the tractor. The fertilizer will be applied in the Spring of the same year that each fertility testing is done.

5.7.3 Grazing Plan

The site may not be grazed in any year that the initial planting of the alfalfa seed mix occurs (Seed Mix #7). This is in Years 1 and 7. WFC will not graze domestic animals on the small Irrigated Cropland on its property but the Morgans are allowed to graze horses in the winter in years 2, 3, 4, 5, and 6. Horse grazing will only be allowed when the soils in the winter are hard and will not be damaged by the movement of the animals.

These management practices were discussed with Jim Boyd, of the local NRCS, and he felt they were acceptable.

5.7.4 Irrigation Management

WFC will manage the irrigation of the 3.96 acre parcel on the WFC property in the northwest corner of the permit. There will likely be a subcontractor actually performing the work.

The Morgan family and helpers designated by them will manage the irrigation and harvesting on their property.

On both properties, documentation will be provided to demonstrate that the required # of shares of water were applied to the property to achieve the desired production in the 1st cut.

6.3 Dryland Pasture Seeding Procedures

Seeding will be done either with a cultipacker type seeder or a drill equipped with double-disk openers, depth bands, and packer wheels. A cultipacker may be used behind the drill to also firm the seedbed. Either of these two types of seeding equipment will provide the greatest level of success in terms of proper seed placement and firming of the soil around the seed. Seeding depths are usually about 1/4 inch deep for the species to be seeded, and never more than ½ inch deep. If it is determined that the drill seeding method is not desirable for a particular area, then a broadcast seeder will be utilized to distribute the grass seed onto the surface of the ground. A large tractor mounted broadcaster having the capacity of holding several bushels of grass seed will be used and the tractor will traverse the field such that overlapping of the seed will occur. After the seed is broadcasted, a spring tooth harrow will be drug over the field to bury the seed approximately 1/4 inch. Since not all of the seed will be covered, the seed rate will be increased 100% over the drilled seed rate. If the harrow is not utilized, such as in a topsoil stockpile situation, then the broadcast rate will be double the drilled rate.

6.5 Dryland Pasture - Liability Period Management

Dryland Pasture will be managed to much lower level than Reclaimed Irrigated Pasture. Initial fertilizer will be placed on all topsoiled areas prior to initial seeding, as described in Section 2.05.4(2)(d). No water will be applied to the areas after seeding.

6.5.1 Management Items

Management and maintenance activities will include any necessary repair of rills or gullies (detailed in Sub Section 8.0), reseeding, or grazing management. Grazing management will be centered on the proper use by livestock of the dryland pasture areas in relation to the associated Reclaimed Irrigated Pastureland. As described by the local NRCS specialist, interseeding of dryland pasture is a normal husbandry practice, therefore, it is allowed on these lands within the permit reclaimed area.

6.5.2 Fertilization Plan

It is important to note that fertility testing and fertilization of the soil will occur when the topsoil is initially placed, which is discussed as a soil preparation practice in Section 2.05.4(2)(d). To achieve goal of normal management for the irrigated cropland areas, the following fertilization plan is proposed after the 1st year:

1) Sampling of the soil on land with Dryland Pasture (DP) post mine land use will take place in years 3, 7 and 9 after seeding.
2) Three soil samples will be taken over each of the DP areas and analyzed by a lab using the standard soil test for organic matter, nitrogen, potassium, and phosphorous. The lab will be informed that the desired use is dryland pasture with a dry grass, forb and shrub mix.
3) The lab will produce a recommendation for fertilizer based on soil samples and the recommended production of alfalfa.
4) The fertilizer is in solid form and will be purchased in bulk from the local Co-Op. It will be applied by small tractor with a broadcast spreader pulled behind the tractor. The fertilizer will be applied in the Spring of the same year that each fertility testing is done.

6.5.3 Grazing Plan

No domestic grazing will be allowed on any dryland pasture areas.