MINE PLAN
General Mine Plan

The mining activity proposed with this submission consists of six proposed pit sequences on various bentonite beds. Table MP-1 includes a listing of projected legal descriptions and disturbance acreages for each proposed pit sequence.

TABLE MP-1. PROJECTED DISTURBANCE LOCATIONS, ACREAGES and OVERBURDEN VOLUMES.

PIT NUMBER/SEQUENCE	LOCATION	ACREAGE	PROJECTED OVERBURDEN VOLUME/ PHASE
Pit 73T (Mowry A Bed)	Sec. 17 T43N R93W	13.5 acres	120,581 yd^3
75T (Rusty Bed)[1]	Sec. 18 T43N R93W	18.8 acres	56,150 yd^3
98T (Mowry A Bed)	Sec. 17 T43N R93W	16.0 acres	73,252 yd^3
102T (Rusty Bed)	Sec. 28 T44N R96W	20.8 acres	68,239 yd^3
Pit 104T (F3 Bed)	Sec. 17,18 T43N R93W	19.3 acres	108,983 yd^3
108T (Rusty Bed)	Sec. 24,25 T43N R96W	106.2 acres	52,624 yd^3

Proposed pit layouts and all associated disturbances are illustrated on Mine Plan Maps 1-3. Pit area locations, boundaries and stockpile sites will be staked prior to disturbance. All topsoil and subsoil will be salvaged as detailed in Appendix D-7, Soils.

These will all be open pit bentonite mines excavated using standard castback mining techniques and procedures Castback mining is a technique that is beneficial both environmentally and economically on many levels. Figure MP-4 shows a model of the castback system. In this process, overburden from the first open pit (phase 1) of a pit sequence is usually stockpiled and contoured adjacent to the first open hole (sometimes referred to as an out-of-pit overburden pile). Top and subsoil are also stockpiled separately in the same general area. Once the bentonite is removed from phase 1, overburden (minus the topsoil and subsoil) from the next open pit of the sequence (phase 2) is cast into the open hole of phase 1. This process repeats itself until the end of the pit sequence. At this time, since there is not overburden available from another phase of mining, material to fill the last hole is acquired by reducing the highwall's steep grade, also known as a highwall reduction. The castback/ highwall reduction process provides ecological and economic pragmatism by promoting live topsoil distribution, as well as eliminating the need for long-distance transport of the original overburden from phase 1. In many cases, this distance can exceed a mile. The cost, energy, and equipment necessary for that effort are well above accepted norms.

[1] Referred to as Thermopolis Shale pit in original submission

Environmentally, castback mining with a highwall reduction is beneficial on many levels. First, a pit sequence can take between five to ten years to complete. In this time, microfauna residing in a deep stockpile effectively die before soils are spread. Also, degradation can occur due to soil compaction. Both conditions degrade a soil's ability to support desirable vegetation on reclaimed pits. Wyo-Ben prefers concurrent reclamation with the spreading of "live" soils to reestablish vegetation, resist erosion, and develop stable and productive habitats following disturbance. Furthermore, complete blocks of reclamation behind the final phases would be impossible because of the need for access corridors to accommodate the hauling of material. Finally, using the castback mining procedure greatly reduces the amount of disturbance when compared to older mining techniques where overburden was piled on the highwall and outcrop sides of the pit until commencement of backfilling.

Mine Plan Map 3 shows a highwall reduction sites at proposed pit 102T. That delineated area is considered to be the limit of necessary disturbance required to accomplish reclamation of the last phase in a pit sequence. In most cases, less area than that shown on the mine plan map is needed to accomplish final fill and contour of the last phase. Figures MP-5a through MP-5l show schematically the sequence of the highwall reduction process both on gentle slopes (MP-5a to MP-5f) and steeper slopes (MP-5g to MP-5l). A highwall reduction is accomplished by removing top and subsoil adjacent to the last phase, and dozing the underling material adjacent to the highwall into the open hole of the last phase. Once contouring of the last phase is complete, the area is then soiled using both material from the highwall reduction area, and a partial amount of saved soil from two or three previous phases. The area of disturbance in the highwall reduction is determined by three factors. One is depth of the highwall of the last phase. The second factor is the size of the phase; and the last factor is swelling of overburden as it breaks up during mechanized removal from the previous phase. In general, a deep highwall will require more disturbance in the highwall reduction area. Similarly, larger pits will require a larger reduction disturbance. Finally, if the overburden in the next-to-last phase has a high swell factor, there will be more material to go into the last phase of mining. This opportunity, when present, minimizes the area of disturbance required for the highwall reduction. Wyo-Ben intentionally reduces the size of its phases of mining as we progress through the pit sequence. When the last phase is reached, it is usually smaller than the first phases of mining, thus reducing the area needed for the highwall reduction.

Typical soil handling practices involved with the first phase out-of-pit contoured overburden/last phase highwall reduction mining system will occur in the following manner: Soils in the area of the first phase of mining and the area designated to receive the first phase of overburden will be removed and stockpiled in the out-of pit contoured overburden pile area. Subsoils of the next two phases of mining and topsoil of the next three phases of mining will also be stockpiled as there is not a reclaimed area in which to distribute it "live". Once the out-of-pit overburden pile is contoured, it can be soiled with some of the adjacent soils that were previously stockpiled during the initial phases of mining. Upon the backfilling of phase one with overburden from phase 2, subsoils from phase 3 may be spread directly on the backfilled/contoured overburden of phase 1(as illustrated in fig MP-4). Topsoil from phase 4 can begin being spread live with phase four soils being placed live over phase 1 reclaimed subsoil. Both top and subsoils may be

spread live from that point until the last phase at which time the highwall reduction is employed to reclaim the last phase of mining. At that point, soils are stockpiled again in order to have a source of growth medium for final reclamation as described above.

Table MP-2 lists specific volumes, disturbance acreages and projected mining dates for each proposed pit.

TABLE MP-2. PROJECTED DISTURBANCE ACREAGE and MINING DATES.

PIT NUMBER/projected number of phases	Projected Opening Date	Projected ending date[2]	Pit Area and Assoc. Disturbances	Approximate disturbance/ year	Operational days / year[3]	Total Disturbance acres
73T/ 2 phases	May 2010	2017	7.7 acres + 5.8 acres (assoc. dist.)	2.0 acres	200	13.5 acres
75T/ 7 phases	May 2009	2018	18.8 acres + 0.2 acres (HR-29.1)	2.4 acres	200	19.0 acres
98T/ 5 phases	September 2009	2017	16.0 acres + 2.5 acres (HR-31.1,2)	2.0 acres	200	18.5 acres
102T/ 5 phases	September 2009	2018	20.8 acres	2.0 acres	200	20.8 acres
104T/ 5 phases	October 2009	2018	19.3 acres	1.7 acres	200	19.3 acres
108T/ 11 phases	November 2009	2024	106.2 acres	6.5 acres	200	106.2 acres
GRAND TOTAL	**NA**		197.3 acres	16.6 acres	**NA**	197.3 acres

It is anticipated that mining at all pits of this plan will be completed through seeding within fifteen years of commencement. Mining will not occur in all pits concurrently in a given year. However, it is likely that activity will occur in two or more pits at the same time as either stripping overburden, removing bentonite, or reclaiming a recently-mined pit.

Figures MP-1 through MP-3, Material Flow Schematics illustrate general material movements, volumes, and final pit cut backfill strategies. Backfill of all other phases will be achieved during the castback sequences as illustrated. Topsoil, subsoil, and spoil stockpiles locations are also illustrated.

Original equipment campsites will be located on lands immediately adjacent to pits, or on lands to be affected by subsequent phases. Campsites will then be moved onto contoured reclaimed areas as mining progresses. No additional acreage will be required. It is not anticipated that a campsite caretaker will be employed to protect equipment during times of non use.

Access to these pits will be provided by existing bonded haul roads, and small spur roads to access pits 75T and 98T, as illustrated on Mine Plan maps 1-3.

[2] Subject to regulatory approval and market conditions.
[3] Numbers are only estimates and may change based on weather and market conditions.

Interim Management Plan

In the event Wyo-Ben temporarily closes a pit, interim management procedures will be implemented as follows: Berms will be placed in all areas around the pit phase where a highwall occurs. A berm will also be installed at the ramps of the pit to prevent entrance. Temporary water diversions will be made around the pit to prevent water from entering the particular pit phase. Bentonite stockpiles and stockpiles with potential deleterious material (spoil piles, etc.) will be bermed to prevent off-site sedimentation. Ephemeral drainages that have the potential to receive deleterious material will have check damns installed. If soil piles are expected to be in place for an extended period due to the temporary closure of the pit, they will be seeded to prevent erosion and loss of soil. Finally, the pit area will be monitored on a regular basis to determine if problems are occurring that need to be addressed.

Monitoring Plan

Wyo-Ben utilizes contractors to conduct the mining and reclamation operations of our business. Our mining supervisor (Currently Greg Sweetser) works with our contractor's field supervisors to ensure that mining is being conducted in a lawful and environmentally responsible manner. He also supervises and directs the reclamation of pits. Monitoring of field operations and contact with our contractor's field supervisors occurs on an almost daily basis. This ensures that mining and reclamation is being conducted according to Wyo-Ben's high standards of mine regulation compliance, reclamation and safety. Wyo-Ben will monitor its reclaimed lands as explained below in post closure management.

Spill Management Plan

Wyo-Ben Inc. will immediately notify both the Wyoming Water Quality Division (WQD) of the Department of Environmental Quality and the Worland Field Office of the BLM for any accidental spills of petroleum products involving more than twenty-five gallons. Soils contaminated by smaller petroleum spills will be removed to the Wyo-Ben Lucerne Mill Site for natural weathering treatment. Additionally, spills of antifreeze or battery acid products will also be reported to BLM/WQD, and soils treated as explained below. Natural weathering treatment will be conducted by spreading the contaminated soils relatively thin over a designated area at the Lucerne mill, where natural decomposition and bacterial consumption of the contaminant can occur.

No solid wastes, either hazardous or non-hazardous, will be disposed of at these sites. All bulk fuel storage tanks will be bermed for spill containment.

Wyo-Ben, Inc.'s Noxious Weed Management Plan for Federal Lands

Wyo-Ben Inc. will implement the following management plan to address noxious weed control on all of its activities conducted on Federal lands:

- Noxious weeds known by the Hot Springs County Weed and Pest office to exist in the County will be the subject of this weed management plan (Exhibit MP-1).
- All Wyo-Ben, Inc. activity areas and access routes will be inventoried for infestations of noxious weeds of concern. Wyo-Ben Inc. personnel will conduct

on-going monitoring of noxious weed presence at all of our activity sites and their access routes and take action, in cooperation with the Hot Springs County Weed and Pest, to remove noxious weeds when located. Any areas found to contain noxious weeds during on-going monitoring will be reported to the Worland Field office of BLM weed coordinator.

- Since mining equipment will be shuttled between Big Horn County and Hot Springs County, all active mining areas of the basin will be inventoried on a yearly basis for the presence of noxious weeds. If noxious weeds are found in active mining areas of Big Horn County where equipment is intended to be shuttled to Hot Springs County, Wyo-Ben will power wash that equipment to prevent the spread of noxious weeds to Hot Springs County.
- All off-road access will be limited to only necessary routes to minimize impacted areas and reduce spread of weeds.
- Access will be controlled through infested areas until weed removal is accomplished.
- Wyo-Ben, Inc. will train mining personnel (including contractor representatives) to identify noxious weeds of particular concern to assist in the monitoring process. Weed identification materials will be made readily available to assist in field identification.
- Vegetation will be reestablished on all soil disturbed by construction, reconstruction or maintenance activities at the first available window of opportunity. This may mean waiting until the fall planting season to help ensure the success of vegetation establishment.
- All seed obtained from commercial sources will be laboratory tested for the presence of noxious weed seed. Native seed offered by local collectors will only be utilized after Wyo-Ben, Inc. personnel have consulted with the collectors to ensure they possess the skills necessary to recognize noxious weeds of concern and sign a statement certifying that they have not collected seed in areas with noxious weed infestations.
- All hay or straw used for check-dam construction or mulching will be certified weed-free.

Haul Road Construction Practices

Wyo-Ben, Inc. will employ BLM road building standards found in the BLM Manual Section 9113 when constructing haul roads. Figure MP-6 shows typical cross sections of Wyo-Ben-constructed haul roads in different topographic circumstances. Only three spur haul roads are proposed in this submission. Those include Haul road HR-29.1 which will cross a large drainage to access proposed pit 75T. Wyo-Ben is proposing a low water crossing in this case as the drainage is large, wide and fairly deep (> 4-feet, see fig D-6.1)). The other two proposed roads include HR 31.1 and 31.2, which will access proposed pit 98T. Other proposed pits will be accessed using previously constructed haul roads.

The following information concerns Wyo-Ben, Inc. exists haul roads that will be used to access pits of the Amendment 6 plan of operations:

1) Haul road HR-24 will be used to access pit 102T. It was permitted in December 1982 with WDEQ/LQD Amendment 4 to permit 321C. This road is currently bonded in the amount of $11,952.00 and is disturbing 16.1 acres of federal lands. The Wyoming Department of Transportation will be contacted if any alterations to the haul road are necessary within their 200 foot BLM issued right of way along State Highway 120. All significant drainage crossings have had culverts placed in them.

2) Haul road HR-26 will be used to access pit 108T. It was permitted in January 1981 with DEQ/LQD Amendment 2 to permit 321C. This road is currently bonded in the amount of $3,638.00 and is disturbing 4.3 acres of federal lands.

3) Haul road HR-28 will be used to access pits 73T, 98T, and 104T. This road was bonded in the early to late 1980's, but is currently released from bond by BLM/LQD. Wyo-Ben will bond the section of road necessary to access its pits in the amount of $9,006.00. This road is currently permitted with the BLM by Endeavor Energy with right of way WYW-139507, and Bonanza Energy with right of way WYW-165035. Wyo-Ben, Inc. will obtain a cooperative maintenance agreement with both companies for that section of road Wyo-Ben will use to access pits (Approximately 17,300 feet in length).

5) Haul road HR-28.1 will be used to access pits 73T phases 2-3 and 104T phases 1,5-7. It was constructed by Wyo-Ben in the early 1980's to access pits 73T phase 1 and 104T phases 2. This road is currently bonded in the amount of $2,620.00 and is disturbing 2.9 acres of federal lands. This road will be improved before being put into service as it has not had maintenance performed for several years.

4) Haul road HR-29 will be used to access pit 75T. This road was bonded in the early to late 1980's, but is currently released from bond by BLM/LQD. Wyo-Ben will bond a section of this road needed to access the pit in the amount of $13,301.00. This road is currently permitted with the BLM by Bonanza Creek Oil Company LLC with right of way WYW-165035. Wyo-Ben, Inc. will obtain a cooperative maintenance agreement with Bonanza Creek Oil Company for that section of road Wyo-Ben will use to access pit 75T (Approximately 22,300 feet in length).

5) Haul road HR-31 will be used to access pit 98T. It was permitted in December 1982 in the WDEQ/LQD amendment 4 submission and constructed in the early 1980's to access pits east of proposed pit 98T phases 2-5. A section of 5,680 feet will be improved to accommodate haul trucks hauling from proposed pit 98T. The entire road is bonded in the amount of $7,572.00 and is currently disturbing 10 acres of federal lands.

Wyo-Ben, Inc. will improve the six existing haul roads to access the six pits of the Amendment 6 Plan of Operations in the following manner:

1) If suitable growth medium exists on the roadway, it will be removed with scrapers and salvaged in existing soil stockpiles situated to the side of roadways (Haul roads HR-28.1 and 29 are two roads where suitable growth medium probably exists).

2) The roadway will be bladed, using a motor grader, to BLM standards including a crown towards the center of the road and a ditch on the edges of roads. Water drainages

that allow water to drain from the road ditches into native lands will be placed in strategic locations along the edges of the roadway.

3) If Wyo-Ben improves two-track trials to haul road capability, it will be done in a similar manner as explained in 1 and 2 above. The only difference is that more growth medium will be available to save as explained in number 1 above; and new soil stockpiles will be situated to the side of roads.

4) When the route of a haul road crosses a drainage, a culvert will be placed in that drainage with the size of the culvert based on the following size table:

Culvert Sizing Table

FLOW (Cubic Feet Second)	Single Culvert Diameter (inches) 60 feet Long
9 cfs	18 - inch
18 cfs	24 - inch
31 cfs	30 - inch
49 cfs	36 - inch

There may be cases where the drainage being crossed lends itself better to a low water crossing than the installation of a culvert. In general, low water crossings will be implemented when the drainage is deep ($\geq$ 4-feet deep) and wide with a flat bottom (In the case of this submission, haul road HR-29.1 is proposed as a low water crossing) .

Haul Road Dust Control

Wyo-Ben's contractor uses a tractor trailer water truck system to water haul roads as a means of dust control. Typically roads that are being used for hauling are those that are watered when conditions dictate the need for such actions. The only time roads are less likely to be watered is during winter months when temperatures are below the water freezing point.

Hauling Rate

Wyo-Ben, Inc, estimates the average number of hauling days per year to be 80 for all proposed pits of this Amendment/Plan of Operation. For each day bentonite will be hauled, it is estimated that haul trucks will make a combined average total of 28 round trips (4 trucks @ 7 round trips/truck).

Pit-Specific Mine Plans

Pit 73T Phases 2-3

Pit 73T will be mined in conjunction with pit 104T as part of the castback sequence. Mining of this castback series will begin in proposed pit 104T; and the last phase of that pit (phase 7) will be filled with overburden from phase 3 of pit 73T in a lateral castback procedure. Phase 2 overburden of pit 73T will be cast into phase 3 as mining proceeds. Phase 2 will be the final phase of the sequence and will be filled from

both over-piled material cast onto phase 3 from phase 2, and old spoil material from previously-mined phase 1 of pit 73T. The area from which the old spoil material is obtained will then be contoured to match surrounding topography, and soil spread from two existing soil piles (top and subsoil) located directly to the north. One campsite/bentonite stockpile area and one soil stockpile area will be shared between the two pits (73T and 104T) as they are in close proximity (illustrated on mine plan map 1).

Pit 75T Phases 2a-2h

Pit 75T phase 2 was originally proposed as one large pit, but is now proposed to be mined in eight smaller phases. Mining will occur using a castback method, but will proceed in a circular pattern as shown on mine plan map 1 and material flow diagram MP-1. Overburden material stockpiled from phase 1 will be used to fill the last phase (Phase 2h) as it will be mined directly adjacent to that material. Hence, no highwall reduction will be required to reclaim the last hole in the mining sequence, and a permanent out-of-pit contoured overburden pile will not be necessary.

Pit 75T will be accessed by a small spur road off of HR-29 that crosses Rock Springs drainage. This road, referred to as HR-29.1, will cross the drainage as a low water crossing because it is quite wide and the banks are at a slope that make this type of crossing more practical than the typical culvert crossing.

Pit 98T Phases 2-5

Proposed pit 98T Phases 2-5 will be mined using a castback method. In this situation, overburden material from phase 2 will be cast into a large depression left in phase 1 of pit 98T. Figure MP-7 illustrates a scaled cross section of the planned contoured permanent pile. Soils of the area in which material from phase 2 will be cast will be removed and stockpiled separately from native soils as this soil will have some cheat grass seed present. Once the material from phase 2 is placed into phase 1, it will be contoured and used as a campsite and bentonite stockpile area. Mining will proceed through phases 2 – 5. No highwall reduction is planned to reclaim the last phase of mining. Instead, material for the last phase will be obtained by over-piled material from phases 4 and 5. This will be possible as there is relatively little overburden to remove from the last phases of mining. Mine plan map 1 and material flow diagram MP-1 show the proposed mine sequence of this pit.

Two new proposed haul roads will be constructed to access this pit. HR-31.1 will be constructed through reclaimed pit 98T phase 1 and initiate from haul road HR-31. Proposed haul road HR-31.2, also initiating form HR-31 will be constructed to access later phases of proposed pit 98T so that a large block of previously mined phases of pit 98T can be fully reclaimed, eliminating the need to leave an access road through the middle of reclamation.

Pit 102T Phases 1-5

Proposed pit 102T will also be mined using a cast back method. In this case, overburden will be placed adjacent to the open pit and temporarily stored until phase two

overburden is cast into phase 1. At this time, part of the stored overburden from phase one will be pushed over the top of phase 2 overburden that was cast into phase 1 and contoured. Figure MP-8a illustrates a scaled cross section of the final topography. Soils of phases 1-3 will be saved adjacent to the temporary overburden pile and be used to spread on initial reclaimed mine phases as explained above. The soils of subsequent phases will be spread live in order to enhance reclamation efforts. Material used to reclaim the last phase of mining will be obtained from a highwall reduction, and over-piled material from the next-to-last phase of mining (illustrated in MP-8b). Over-piled material will be stacked on the outcrop side of the last phase in preparation for partially filling the last phase of mining.

This pit will be accessed by the bonded haul road HR-24. No new spur haul roads are proposed to access this pit.

Pit 104T Phases 1, 5-7

This proposed pit will also be mined in a castback method, and as mentioned above, will be mined in conjunction with proposed pit 73T. Phase 1 overburden will be cast into a large depression left in reclaimed phase 2 and contoured in place after soils of that area are first removed for salvage. Soils from reclaimed phase 2 will be removed and stockpiled prior to the casting of phase 1 overburden into phase 2 reclaimed area. Figure MP-9 illustrates a scaled cross section of the planned contoured permanent pile. Subsequent phases will proceed by casting overburden into previously mined phases. When the last phase of the pit is ready to be backfilled, that material will come from phase 3 of pit 73T as explained above.

An equipment movement road (will not be used as a bentonite haul road) is proposed west of proposed pit 104T (see mine plan map 1). This road already exists as a reclaimed two-track road and will only be minimally upgraded if at all. The road will be used to move equipment between proposed pits 73T/104T and proposed pit 75T. No other spur roads are proposed to access these pits.

Pit 108T Phases 1-11

This proposed pit will be mined in a series of linear and lateral castback phases (See material flow diagram MP-2). No out of pit spoil pile or highwall reduction is proposed for this pit. Instead, Wyo-Ben will over-pile material, and push it back in the first and last phases of the mining sequence. This pit will be accessed by haul road HR-26. No new haul roads are proposed to access this pit.