Stepping out the Pace of Solving Ming Subsidence Problems,
Improving the Restoration of the Integrated Mining Environment

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Abstract: The typical problems caused by Mining Subsidence and mining pollution made by coaling, made the Mine Subsidence reclamation and retorting the integrated mining environment necessary. Then, we create effective management measures of “full investigation, scientific planning, focused, sound institutions, the establishment of the system” and create the advanced technology of “mud pump reclamation, digging low-pad, deepened pad low, the reclamation of large machinery, biological reclamation and layered dissection staggered backfill”. All these measures made an effort on the reclamation of the Mine Subsidence and restoration of integrated mining environment. Furthermore, make a statement of how to make full use of the gangue, abandoned mine sites, mine waste as filling and new materials, how to do a good prevention of geological disasters in mining areas, and how to solve people’s living and working problems in the collapse area. Finally, we make a strategically research and practice in JiaWang mining district.

Key words: mining subsidence; integrated mining environment; restoration

1 Mining Subsidence District Profiles

Jiawang District is in the northern part of Jiangsu Province at the junction of Shandong province and Jiangsu province, remaining part of Shandong hilly. Jiawang District contains area of 690 sq km region and 530,000 Population. The area is rich in resources of coal and its coal mining industry is advanced. Coalfield area is 202 square kilometers, occupying 30.3 hectares land and involving four Townships, Five offices, 50 administrative villages. Population on the Coalfield is above 261,530 people total. Since 1882 mining has been nearly 124 years of mining history. The region has five coal mine (Hanqiao, Qishan, Dongzhuang, Qingshanquan) which annual output is exceeding over 1 million tons, but Qingshan and Dongzhuan two mines has been closed; Mine operated by other place people is 16, and its annual production is exceeding 100,000 tons. Six of them have been closed.

Local small mines (Kiln) are 229. All of them have been closed after 7.22 accidents. Because of the high intensity of coal resources exploitation, beyond the ecological system of internal adjustment ability to land resources and caused serious damage to the ecological environment

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1.1 The surface subsidence and damage
Jiawang District is one of the coal mine production base in Jiangsu north. In the development process of construction and mining coal resources of years, in addition to coal and coal infrastructure Rock Hill piled up a lot of land occupation. The long-term high-intensity underground mining left a large gob, bring surface subsidence above, form a large coal mining subsidence. According to 2003 statistics measuring, there are total of 11.28 million acres collapse land, Collapse depth of 0.5 meters, Water up to 4.5 meters and Water area and land area ratio of 1:5. 5.74 hectares are stable sink, 5.55 hectares instable sink. Surface subsidence poses a serious danger to the surrounding villages and caused great impact to the villagers production and livelihood.

(1)Serious damage farmland, the area of arable land dropped, and people aggravate contradictions with land. At present, cultivated land destructed by coal mining subsidence is 5.87 hectares, of which: 1.75 hectares stable hydrocele, 2.56 hectares instable hydrocele. A lot of quality farmland inundated get into wetlands, clusters of wasteland depression, and species have stopped yielding crops. The per capita area of cultivated land subsidence from 2.98 acres in 1951, dropping to less than 0.46 acres, a large number of farmers lost their land's survival. According to estimates the current land subsidence area is increasing each year will increase in 2000 acres.

(2) Ground construction and the farmland facilities are destructed. Gob above the surface uneven subsidence, causing the ground Housing crack, tilt, and even collapse. Road sinking stagnant water, inaccessible, irrigation facilities were damaged, affecting agricultural production

(3) As Jiawang surface around old mine subsiding, causing diving bit lower, surface water drainage and dry river and spring, bring difficult to the District People's living water.

(4) Coal mining caused land subsidence due to former farmers for the survival of farmland into a vast expanse of water or the swamp overgrown with weeds. According to statistics, there are 10,200 landless peasants, 3.6 million people "rural to no rural". However, due to local small Jiawang, the limited capacity of employment, placement more difficult, farmers petition to government. That cause social disharmony factors increasing, and make the contradictions of people and land more obvious.

1.2 The Necessity of Coal Mine Collapse land and the environment comprehensive management.

With the rapid economy development, the accelerated process of urbanization, people have increasingly high demands to the development and utilization of land and ecological environment construction. Now, particularly the coal resources depleted, it is more and more emphasis on land, the reclamation of collapse and comprehensive management to the ecological environment become more prominent.

(1)It is important way to achieve the targets of total arable land homeostasis, ease land conflicts. "A large population, relative shortage of arable land resources, is China's basic national conditions" Jiawang District coalfield area have population 41,500, but only 1.91 million
acres of arable land, per capita cultivated land less than 0.5 acre, the total of food 13,000 tons 314.7 kilograms per capita grain, has yet to reach the level of per capita of the country. Therefore, in a certain period of time, to ensure that food supply, it is imperative to maintain the total arable land homeostasis.

Increased reclamation efforts to mining subsidence to increase arable land, has become the crux of people dinner problem.

(2) Land reclamation is the necessary choice of the comprehensive management of the environment

Due to long-term high-intensity exploitation of coal resources, the nature of intervention strength exceeds resources and the environment self-renewal capacity. The accumulated effects overrun the regional carrying capacity. It is obvious that the plundering of resources development and extensive use could cause the damage to the surface, Soil erosion, collapse and the "three wastes" pollution, environmental pollution and ecological imbalance.

Thus, land reclamation of the mine is inevitable choice to comprehensive management environment. Land reclamation is not just to increase arable land, more importantly, environmental treatment, a soil, water, road and forest Comprehensive Treatment, building fruit belt, leisure tourism, agriculture vegetable seed breeding base construction in regional units. The landscape changed significantly, the environment of diggings gets comprehensive management.

(3) Collapse Reclamation and the improvement of the Mine Land environment is a strong guarantee to promote social stability and unity.

Coal mining activities, is in itself a strong social economic activity, which involves all aspects of society, particularly the destruction of arable land to farmers, social deterioration of the living environment etc. Closely relate to the people's interests. In particular, the mechanization of coal mining, production of a substantial increase, which increased the area of the collapse, make serious impact on local residents production and life. In the process of the enterprise dealing with levyland, relocation, resettlement and compensation, they face lots of other new problems. The farmers living on the subsidence were often appeal to the government organs and make trouble, and so on. That creates local unity instability. Reclamation of Mining subsidence comprehensive management of the environment is be propitious to harnessing of the unity and the building of a new socialist countryside.

(4) Reclamation of Mining subsidence comprehensive management of the environment is be propitious to promoting a solid building a new socialist countryside.

The requirement of the new rural construction is "production development, well-off life, civilized rural culture, Village Vice clean, democratic management". Fundamentally speaking, the economy is the foundation to promote the building of a new socialist countryside, so we must adhere to give top priority to the development of rural economy and Promote food stable economic development and increase farmers revenue. The primary task of reclaimed subsidence land is to restore cultivated land value, to take various engineering measures to quickly restore the subsidence land farming conditions. That would guarantee food production and develop socio-economic. Only carrying the comprehensive management, we could clean and tidy village feature, and improve the
people's living standards of people living on subsidence field.

2 The basic procedure about the reclamation and the comprehensive treatment of ecological environment in Coal mine subsidence

Jiawang County had explored a set of its own basic procedure about the reclamation and the comprehensive treatment of ecological environment in coalmine subsidence. It is worked out through practice in the reclamation process in the past 10 years. Relatively complete management system about the reclamation and the treatment of ecological environment in Coalmine subsidence has been established preliminary. The system is established according to the following aspects, the plan based on in-depth surveys and scientifically forecasts, the admissibility during decision-making phase, the implementation of reclamation project, the funds management, the territorial coordination and the supervision of reclamation effect. The specific implementation steps are:

2.1 Plan the reclamation and the ecological restoration work in Coal mine subsidence scientifically

In order to do well in land reclamation and comprehensive treatment of ecological environment, first, give a thorough and comprehensive investigation of Coal mine subsidence case all over the county, or other, have a 20 days' investigation about “property rights stability and subsidence plot the reclamation and land Use” in the coal mine subsidence; Second, employ the experts and professors from China University of Mining and Technology and other research institutes. They analyze and evaluate the distribution the extent of the collapse the reclamation site and methods, and give a comprehensive planning about mined land reclamation and comprehensive treatment of mines ecological environment; third, according to the key area of reclamation confirmed by planning, layout the fields water roads forests and village in the reclamation area scientifically, design the bridge culvert gateway gate stations and drainage reasonably; At last, make a feasibility operation scheme; give an aim and direction of the reclamation. This provide a scientific and orderly, rational and effective basis for the mined land reclamation and improvement of environment in our county.

2.2 Do well in reclamation and environment rehabilitation in coal mining subsidence.

Recently, we focus on increasing the effective area of arable land and comprehensive treatment of environment as the center, starting from the practice, according to the given place, we have the whole plan implemented in phase, combine point with area, implement
it from a point to an area; Irrigation and drainage should be in advance, and basic engineering should be equipped with, roundly combine farming with feeding and vigorously develop highly-efficient agriculture; Meanwhile that the state and the superior government departments encourage the treatment work, organize the village, town and corporation raising the labor force and funds actively to reclamate the collapse area and improve the environment. Recent years, we had relegated a total of 3.916 million mud mined land, among that 3.13 million mud are newly-added farmland, 2.35 million mud are newly-added arable land, and 7,698 mud are cultivation water. In 2004, 600 mud green space used for improve the environment had been built in south of Jawing City. It had greatly eased the contradiction between population and land use, had improved the ecological environment in mining area, also improved the I farmers’ living condition, and had achieved fine social, economic and environmental benefits. The specific steps are:

(1) Emphasis the key works, and does a good job in the implementation of the reclamation project carefully. During the process of mined land reclamation and ecology reconstruction, carry out the set conscientiously, organize reclamation implementation carefully, supervise the reclamation quality strictly. In the past ten years, we had implemented 60 reclamation projects, involving a total area of 0.592 million mu, among that 0.308 million mu are newly added arable land, 496.4 mu are shelterbelts. The investment has reached 130 million Yuan. One key state projects -Shanghu and Zizhuang reclamation projects, with a total area of 0.156 million mu, 9,100 mu of newly added arable land, had a total investment of 67.5 million Yuan. Now, it has been completed and to be examined. Since 2001, Jiawang County has implemented the national agricultural comprehensive development and mined land reclamation projects for five consecutive years, involving two towns, twelve villages, and had a total budget investment of 23.74 million Yuan. The subsidence area was 0.118 million mu. Among that 7302.2 mu are newly-added arable land, 7100 mu are newly-built irrigation farmland, 7109 mu are newly-added drainage area, 4655 mu are newly-added Farmland Protection Network area; Improved land area is 7109.5 mu; Bridge, culvert, gateway, gate stations, power all have a new look. The implementation of these projects has greatly improved the ecology environment and investment environment of mined area.

(2) Take measures to greatly mobilize the enthusiasm of the masses. In order to mobilize the masses of the people actively to involve in mined land reclamation, a series of preferential policies have been formulated. First, build a diversified mechanism, established the "Open-2, two enliven" policy, that is, do not limit the agent and the nature of reclamation, allow corporation and individuals participate in, and revitalized reclamation explore mechanism; do not limit the business manners, allow for a variety of economic participation and enliven their operating mechanisms. Second, encourage farmers to use the reclamated land and plant efficient crops, bring the prenatal, delivery and postnatal services into effect.

(3) Strengthen scientific management, and ensure the high quality of reclamation and environmental treatment.

During the ten years’ practice of reclamation and ecology rehabilitation, Our County has worked out a series of effective management measures suitable to Jiawang mined land area. The Specific steps are as follows:
First, combine founding sound institutions together with perfecting the policy. That is to found all kinds of policies for sure at the same time there is a leadership directed institution, and avoid blindness and instability. Second, combine contract management with corporate project management. Reclamation projects implemented according to corporate system, the corporate is responsible for the implementation and management of the project, further define their own rights and obligations, and the construction contract should be signed strictly to ensure that construction projects can be carried out smoothly. Third, combine fund management with quality management. The construction units get the single billing corresponds to each quality acceptance, avoid the waste of capital investment, and ensure the project quality. Make everything targeted. Fourth, combining the new reclamation technologies and reclamation projects with practice. As the projects have different natural conditions, their geological conditions, soil structure and the extent of the sink age is different, we must match the technological innovation with the actual situation in the process of land reclamation and ecological rehabilitation, and then the land reclamation work can goes systematically. Fifth, implement the reclamation combining co-ordinate arrangements with territorial coordination. The reclamation and restoration work in coal mining subsidence is a social system project. Involved many aspects, in addition to labor, financial, material, reclamation technical measures, the land use levels after reclamation and other issues is also especially complex, and it changes a lot, so making compressive arrangements and coordinating all aspects of positive factors is very important to do well in land reclamation and comprehensive environment treatment.

2 The technical measures on recultivating Mining Subsidence and restoring environment comprehensively

It is a huge complicated project to recultivate mining subsidence and restoring integrated environment in a one-hundred-year old coal which covered historical, natural, social and economical aspects. In the recent years’ recultivating and biology rebuilt practices, according to the nature condition, accompanied with other aspects, JIAWANG district restore the mining subsidence and the polluted environment by a series of engineering and biology measures. Thanks to this practice, JIAWANG district find different recultivating technology.

3.1. The sludge pump reclamation subsidence field technology

Proper condition: JIANWNG district located near to HE’NAN, DAWU ,ZiZhu area, with a one meter deep surface soil, and most soil here are loosen sandy loam, mixed multilayer clay pan in middle, which are sediment formed in recent years and are good for the sludge pump reclamation subsides field technology. Operation process: first, make a cofferdam in the reclamation land, make use of high-handed pump water jet to crash the subsiding soil; then use slurry pump to transport the filling to the cofferdam, the slurry forms
reclamation soil after deposition, drainage, dry and hard, and then it can be used as infield after a plow.

The slurry pump technology is easy and convenient, which is not restricted by the size or the location of the subsidence, and is not effected by the ponding water, this technology makes it unnecessary to draining off or reduces water level by manpower, The reclamation process is simple, easy to be under construction, and technology demand is not high, the operation is simple and safe, the construction is under a high speed, which can reach 15 squares/hour, and the cost is also low, 2-3 yuan per square meter. Such reclamation land can be plowed in the right year, the result shows that crops such as legume, maize all have a fairly good harvest in that very year in reclamation. As a result, to some degree, the slurry pump reclamation technology can make the reclamation soil melioration, so as to be more beneficial for the crops and other plant's growth. However, the reclamation practice recent years also indicates that this technology needs to have certain water; and also it needs a long time for the slurry to be dry and hard, what's more, the reclamation soil's organic content is low, physics and chemistry character are relatively poor, people should carry out necessary amelioration in advance, urging it "curing", so as to improve the soil's life-force.

3.2. Excavate the highland and fill up the lowland, combining the digging machine and the earthmover self-discharging haulage vehicle together reclamation technology

In SHANGHU reclamation area, the surface soil is black clay mainly, contains a few gravels, the surface soil is loosen structured, and easily stripped. However, there is gravel tier, 0.5-1.5 meters below the earth (including gravel clay pan). The gravel is in irregular shape, with an average thickness of 0.6-1.5 meters. This is one kind of new reclamation technology, which is good for the haulage vehicle together working.

Reclamation: that is to use the method of "separately stripped, alternatively backfilled" to keep the upper subsidence covered with organic soil. First, push the ready soil together to the suit place by the earthmover; then excavate the high opening gravels, put them in the lower land, after make the surface level off, transport some surface soil of other place by the quadricycle, then the reclamation soil can be taken into use after loosen it, and the mellow soil is still kept in upper place.

The advantages of this technology are: Mechanized assignment, high-speed construction, high efficiency, it can dig three squares one time, one digging machine can dig nearly 300 squares one day, its cost is also low, this process was accomplished by separated block and separately stripped, alternatively backfilled, the main step is to backfill the mellow soil to surface soil, this technology was well received by the local farmers because it makes less damage to the soil structure than the other methods, more than this, after reclamation, the soil can be taken into use. In SHANGHU district, we usually carry out this technology in large-size reclamation, and its advantages and efficiency has already been proved by practices. This technology had ever got the second prize of the national science.

3.3. Excavate the highland and fill up the lowland by shovel transporting
machine technology.

In the deeper subsiding place, the surface soil is mainly black clay, including a few grits, with the thickness of nearly 0.6 meter, driving water level about 2 meters. In order to meet the high level of soil amounts demand after reclamation, when excavating the highland and filling up the lowland, the fish strew should be 3.5-4 meters deep. The soil diged out is transported to the lands which are designed lower than other field by quadricycle, then use the shovel transport machine push and pull, shovel and fill, after reclamation, the soil can be taken into use.

Shovel transporting machine technology is also a kind of new technique, which is not widely used in the mining reclamation field. In the area of less ponding water and lower diving level, this technique enjoys great superiority in large-sized mining subsidence reclamation because of its high efficiency, low cost, less destruction to the soil structure, which was well received by the farmers. The district locates in the reclamation national project zone, adding to its proper conditions, made the superiority more obviously, the above two reclamation techniques were applied in SHANGHU and made great efforts, now, they are widely used by other areas.

3.4. The use of biotechnology in the reclamation

Jia Wang mining area belongs to plain area basically, with fertile soil, rich products, and developed agriculture, where can be seen as one of the food supplies of XUZHOU. There are mainly dry land and rice land in the mining area. Good dry land of reclamation still gives first place to the cash crop such as wheat, maize, peanut, cotton, sweet potato, vegetable etc. and also will make part reclamation land grow fruit tree, pear, peach, grape, winter Chinese date and medicinal trees, etc. most of the southern reclamation area plant rice, after two or three years, the production in the reclamation land will usually reach to the following: maize, more than thousand kilo/mu, wheat, more than 600 kilo/mu, soybean, nearly 300 kilo/mu, part of the area cultivate high-effect characteristic agriculture, all with a good output. The ecological environment of the mining subsidence is greatly improved; especially the new residential district after land reclamation, the new face of new socialism rural area is well embodied.

Great changes has taken place in the aquatic product and livestock breeding area during the process of mining residence reclamation and ecological environment improvement, we persist the principle of "adjust measures to local conditions", "suitable is an agriculture, ought to fish then fishing ". We dig a fishpond on the reclamation land, beside this, we also give attention to the other associated projects, and establish the optimization agriculture, built the dimensional farms which are used to feed fish, pig, duck and so on, all these measures have received high economical, social, and ecological benefits.

4 Integrated management measures, governance mine environment
4.1. Development and utilization of abandoned mine sites and gangue, the waste-changed into useful resource.

Because of continually mining, Jia wang District nearly resources-exhausted, and the Well shut down, mine closed in recent years. At present, there are only two large, five medium-sized mine ore, and the closure of all the small coal mines. It leads to serious land and environmental damage. According to incomplete statistics, abandoned mine land destroyed, and about 4246.8 acres; Waste Dump size of the region have as many as 26, about 100 million tons. Over the past few years we improve the environment around the mine so that it could be for use and transformation to integrated measures for the waste-changed.

(1) Full use of the old mine site, to make the best use. Right nearby the town and the village, with better infrastructure, these sites are returned to the government and recovered directly to villages and towns, the development of the collective economy by farming, agricultural processing industry. Right near the village, smaller and farmland in the protected area, according to "the basic farmland protection" provisions, dismantling, reclamation also in agricultural tillage management; in an area of small villages and mines, to the collective, in accordance with the relevant policies and spending as a site for families to housing.

(2) Full use of mine waste water, to solve the problems of irrigation water for agricultural production, mine water tested well can be used for farmers’ living water individually, a major supply is to build water factory.

(3) Utilization of waste coal, the waste-changed. Our Mine Waste Dump large area, not just to take up the land, but bring in serious pollution of the environment. These acres of land near Waste Dump, as the Gobi Desert, grassless, dripping not survive, every wind, dust filled everywhere, seriously pollute the environment of mine. When it rains, sulfur yellow water everywhere horizontal flow, and water pollution etc. For the comprehensive harnessing of the environment must address the root causes. Specific measures

As to the first filling of Reclamation collapse. use ventilation burning heap of waste and good morals, as filling, then to create a farm. According to the second wall materials innovation policy, using coal burning. Specific requirements: gangue content shall not be less than 70%, more than 80 blocks kiln site in considerable amount, in recent years many burned Block Waste Dump. The third use of coal gangue pad low elevation collapse, resettlement villages housing relocation sites.

(4) As a general filling of the highway, the effect is good.

Finally, there is coal gangue power. The current generation of Jianping has built power plants, Yaozhuang power plants, thermal power plants and five East plant. At the same time, the powder plant output can be done hollow cinder blocks. That is to recycle resources, the ecological environment rectified.

4.2. Actively control the geological disasters in mining areas to avoid unnecessary losses.

Against the impact of surface mining on the prevention of geological disasters, the
following major work done:

(1) To prevent leakage of the surface. The key is to prevent the collapse of surface cracks in the leaking to the mine, causing disasters. To this end, we carefully inspected, clarifying the situation, impervious different measures, the past 10 years have never incidents.

(2) Enterprise villages, and underwater road below, the scientific method of strip mining, and an agreement and local, national and collective to avoid causing unnecessary losses.

(3) Yet the move to the top Coal mining villages, the use of Tangshan Coal Institute for the "settlement-variant" technology, to advance the village site and backfill the structure, security and prevent secondary to the relocation of sinking.

(4) Do consulting work of the geological collapse. Let the masses understanding of the basic geology of coal mines to prevent unexpected incidents and contingency.

4.3. Active management, improve mine environment.

(1) Hardening the road: the road surface subsidence area, and mine roads, is being renovated into a government-funded cement pavement.

(2) Increase the intensity of planting vegetation: grass, flowers, trees, shielding, beautify the environment.


(4) Strengthening environmental governance.

4.4 The collapse of people's livelihood and production issues resolved properly resettled.

In the land reclamation, we are actively guide the masses, do efficient cultivation and aquaculture three-dimensional technology to increase their per capita income: for example, the right of Quantai village in Dawu town of edible cactus, Castle Peak Village construction spending exceeded the supply of ten thousand acreage winter Chinese date Park, the old mine office Quan Wang Tou built fish ponds, have made good effectiveness.

In the last few years for new land, nearly 8.98 million kilograms of grain increased every year, producing nearly 1.32 million kilograms of fish, duck eight million only, only 10,000 sheep, cows near 800; Provide water for more than 20,000 people; resettlement of over 30,000 people live. Through Comprehensive Improvement of the ecological environment, Jiawang old mine sandwich. The relocation of the new village, a new two-story small building, in front of cement on both sides of trees, that shows a new scene of the harmony of a new socialist countryside.

5 The exploration and practice about the new ideas and new technologies of land reclamation and comprehensive treatment of ecological environment in coal mine subsidence in Jiawang County.
Jiawang County has made great achievements on mined land reclamation and ecology reconstruction after a dozen years continually explore, study, practice, review and development in reclamation processes. However, we also recognize clearly that the reclamation task in subsidence area is still very arduous, and the comprehensive treatments of mine environment are not yet in place, we should not be satisfied with the actuality. On the contrary, we must adhere to the scientific concept of development, and advance with the times, blaze new trails, change our mind positively and strive to raise awareness, further the land reclamation and ecological reconstruction to a higher level.

5.1. carry out mine subsidence reclamation and environmental restoration work with a more positive attitude.

Recently, we always treat mined land reclamation and environment comprehensive treatment in coal mine subsidence as a closely related unit, Constantly use advanced technology, optimize reclamation process, Accelerate the pace of reclamation and comprehensive treatment efforts of mine environment, strive to reduce the coal mining impact on the environment, the treatment and the protection of the environment, current internists and long-term interests, mined land reclamation and the sustainable development of environment should be combined together, so as to do land reclamation and environment renovation as a power in the contemporary and benefits in future, will benefit our posterity, in order to promote comprehensive treatment of mine environment, a newer and better idea should be introduced to guide the reclamation work in coal subsidence.

No matter exploit rehabilitation steadily sink of old subsidence land, or just steadily sink or sinking of new subsidene land, we should continue to persist the principle of development. Namely, to renovate and recover the land, which destroyed, here “recover” not only means recover the land and ecology, for example, recover the destroyed land to the original condition of agriculture ploughs by ecology succession. But also regard the land which need rehabilitation as a new resource type, according to its natural environment condition, exploit and reconstruction it at the foundation of ecology suitability analysis, enable it to possess economic value again and become an artificial ecosystem which do good to local environment and economy development. Thus, we should persist the principle of developing rehabilitation. To find the potential of resources properly with more positive way, maximum the production capacity of land, thereby, make sure different kind style of rehabilitation to coexist fully, the economy, society, and ecology benefit highly unify, and rehabilitation as well as ecology environment renovation to enter the benign circulation orbit.

5.2. Implement subsidence reclamation and ecological environment restoration with more advanced and more effective technologies

We have reclaimed some old coal mine subsidence from the Qing shanquan to the
Hanqiao mine for development more, throw away the old ideas “destroy first, disposal later”, and strive to realize years, and have discharge some old debts and obligation gradually. We emphasis the future “disposing while destroying”, and avoiding new debts. During the reclamation practice, we explore new technologies actively while do the reclamation.