Unmanned operation of a stacker with tripper car and two portal-type scraper reclaimers
Tagebau Vereinigtes Schleenhain

Lignite screening and blending yard with new Lippendorf power station
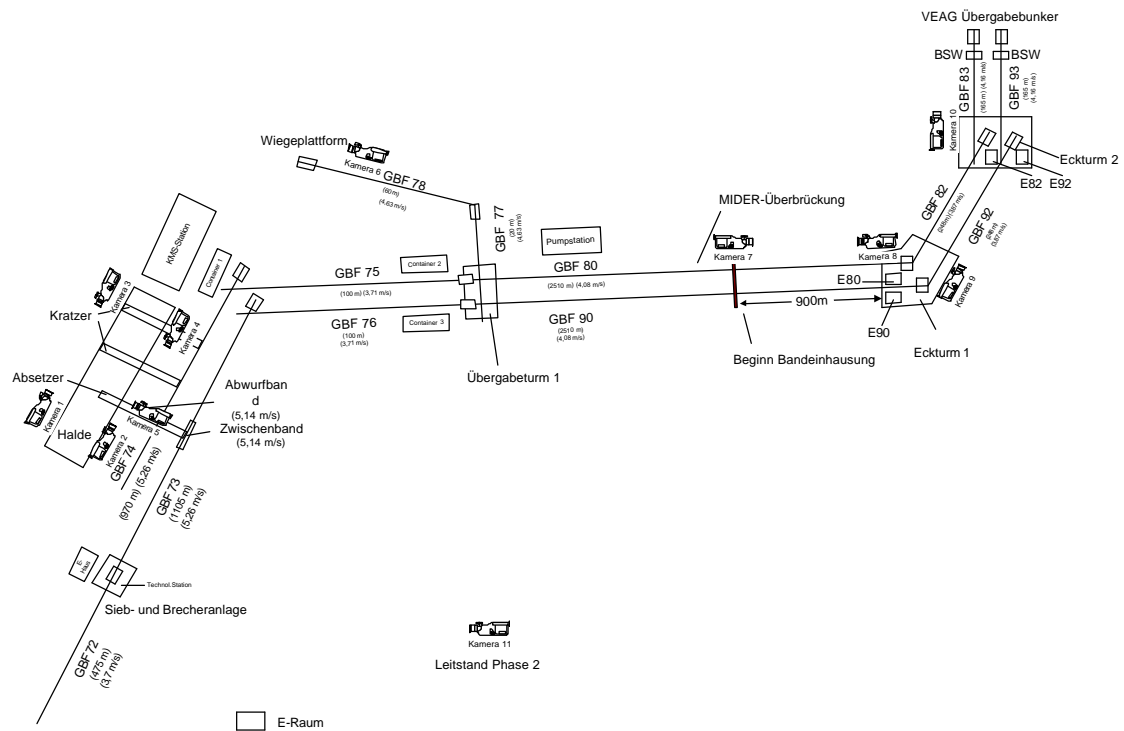

Mining field

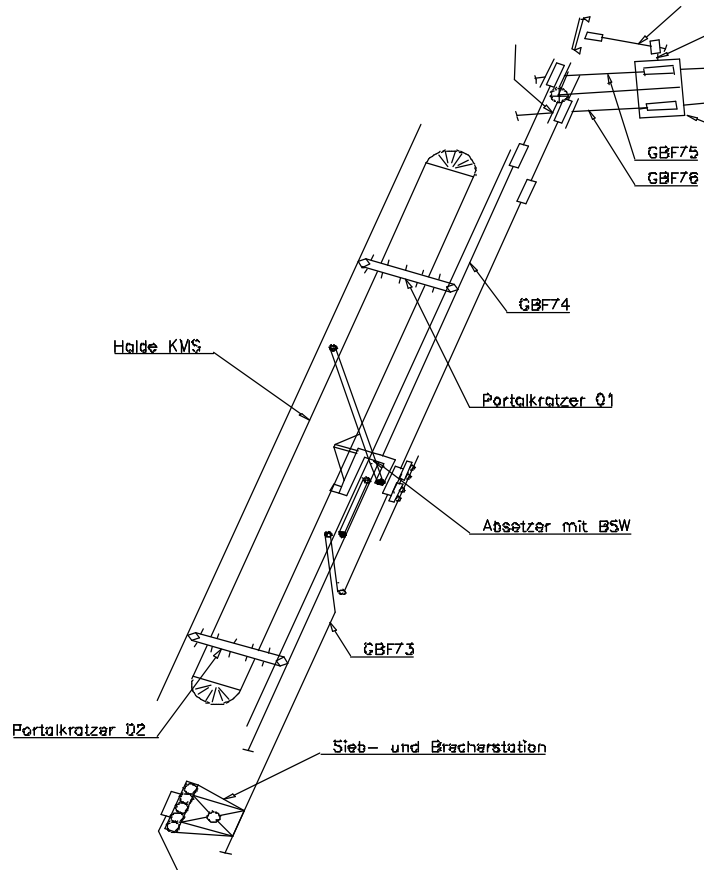## Main functions of the lignite screening and blending yard

1. Serves as a buffer between the operations of the mine (five days a week) and the power station feeding cycle (seven days a week).

2. Holds reserves of up to 400 000 tonnes of raw lignite

3. Provides for even lignite quality through a stacking and reclaiming pattern using a lignite quality-based model.
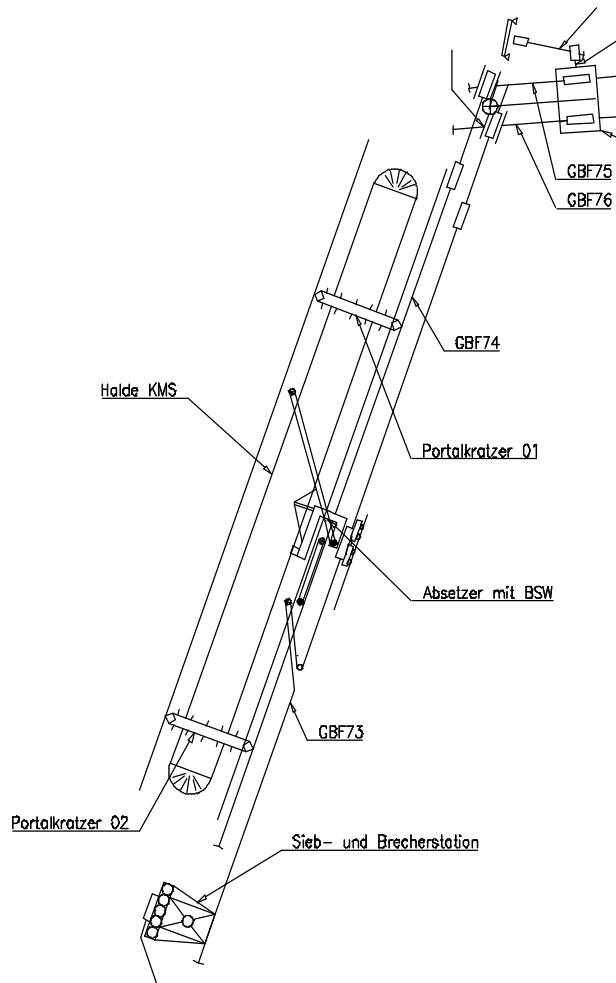
General scheme of the lignite screening and blending yard

VEAG Übergabebunker

BSW   BSW

GBF 83 (165 m) (4,16 m/s)

GBF 93 (165 m) (4,16 m/s)

Kamera 10

Eckturm 2

E82   E92

Wiegeplattform

Kamera 6   GBF 78 (60m) (4,63 m/s)

GBF 77 (20 m) (4,63 m/s)

Pumpstation

MIDER-Überbrückung

Kamera 7

GBF 82 (5km/s) (4m/s)

Kamera 8

GBF 92 (165m) (4,05m/s)

KMS-Station

Container 1

GBF 75 (100 m) (3,71 m/s)

Container 2

GBF 80 (2510 m) (4,08 m/s)

E80

900m

Kamera 9

Kratzer

Kamera 3

Kamera 4

GBF 76 (100 m) (3,71 m/s)

Container 3

GBF 90 (2510 m) (4,08 m/s)

E90

Eckturm 1

Übergabeturm 1

Beginn Bandeinhausung

Absetzer

Kamera 1

Halde

Kamera 2

Kamera 5

Abwurfband (5,14 m/s)

Zwischenband (5,14 m/s)

GBF 74 (970 m) (5,26 m/s)

GBF 73 (1105 m) (5,26 m/s)

E-Raum

Technol.Station

Sieb- und Brecheranlage

GBF72 (475 m) (3,7 m/s)

Kamera 11

Leitstand Phase 2

E-Raum

Stacking conveyor Gbf 73 with
stacker and tripper car, 1600 mm belt width

Reclaiming conveyor Gbf 74 with portal-type scraper reclaimers
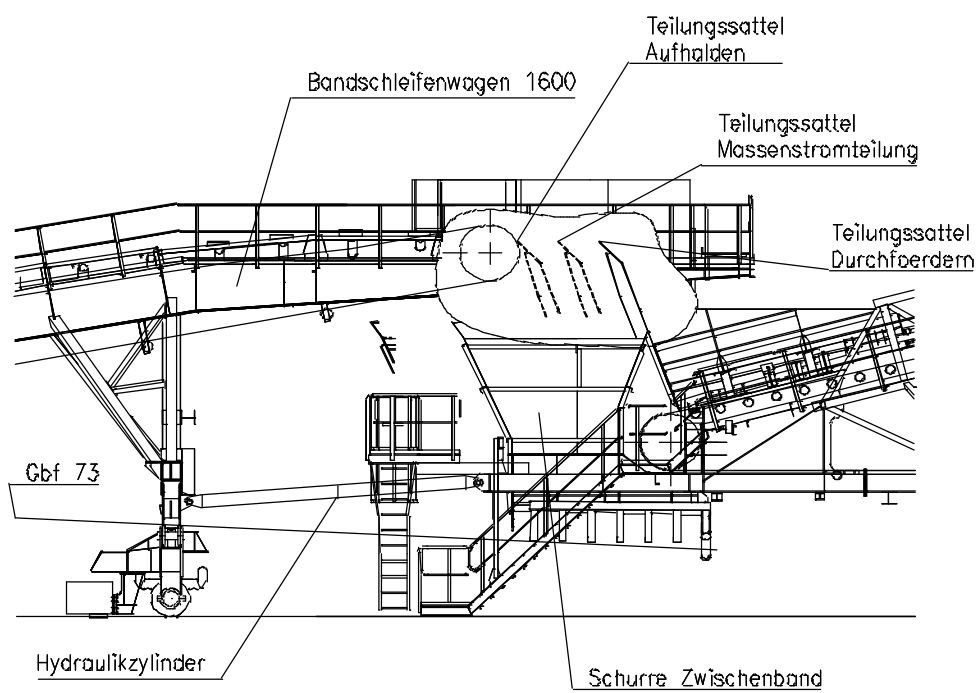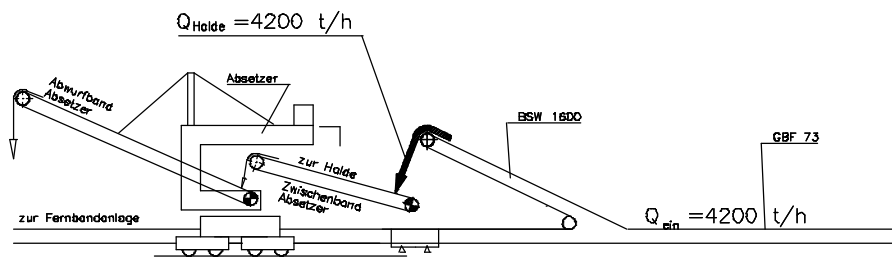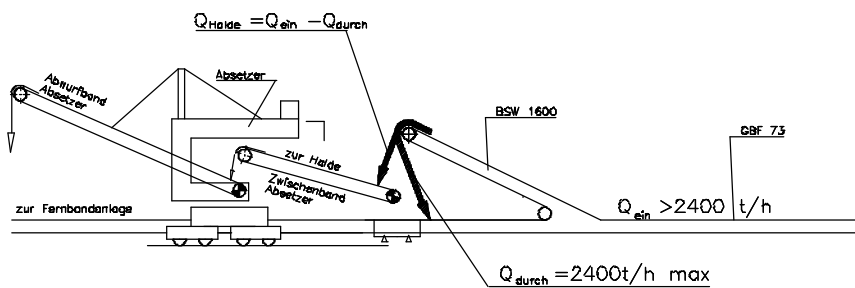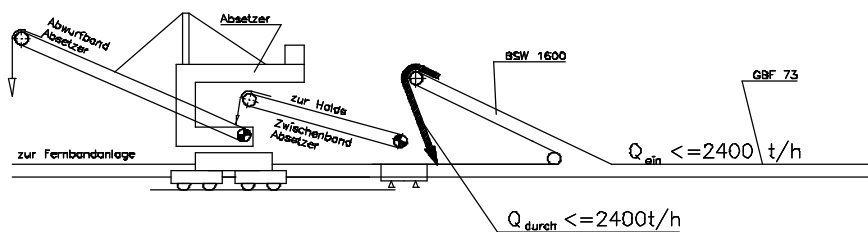
Central Control Station

Stacker operations

Stacking (normal operation)

$Q_{Halde} = 4200 \ t/h$

Abwurfband Absetzer

Absetzer

zur Halde

Zwischenband Absetzer

zur Fernbandanlage

BSW 1600

GBF 73

$Q_{ein} = 4200 \ t/h$

Division of material stream

$Q_{Halde} = Q_{ein} - Q_{durch}$

Abwurfband Absetzer

Absetzer

zur Halde

Zwischenband Absetzer

zur Fernbandanlage

BSW 1600

GBF 73

$Q_{ein} > 2400 \ t/h$

$Q_{durch} = 2400 t/h \ max$

By-pass operation

Abwurfband Absetzer

Absetzer

zur Halde

Zwischenband Absetzer

zur Fernbandanlage

BSW 1600

GBF 73

$Q_{ein} <= 2400 \ t/h$

$Q_{durch} <= 2400 t/h$

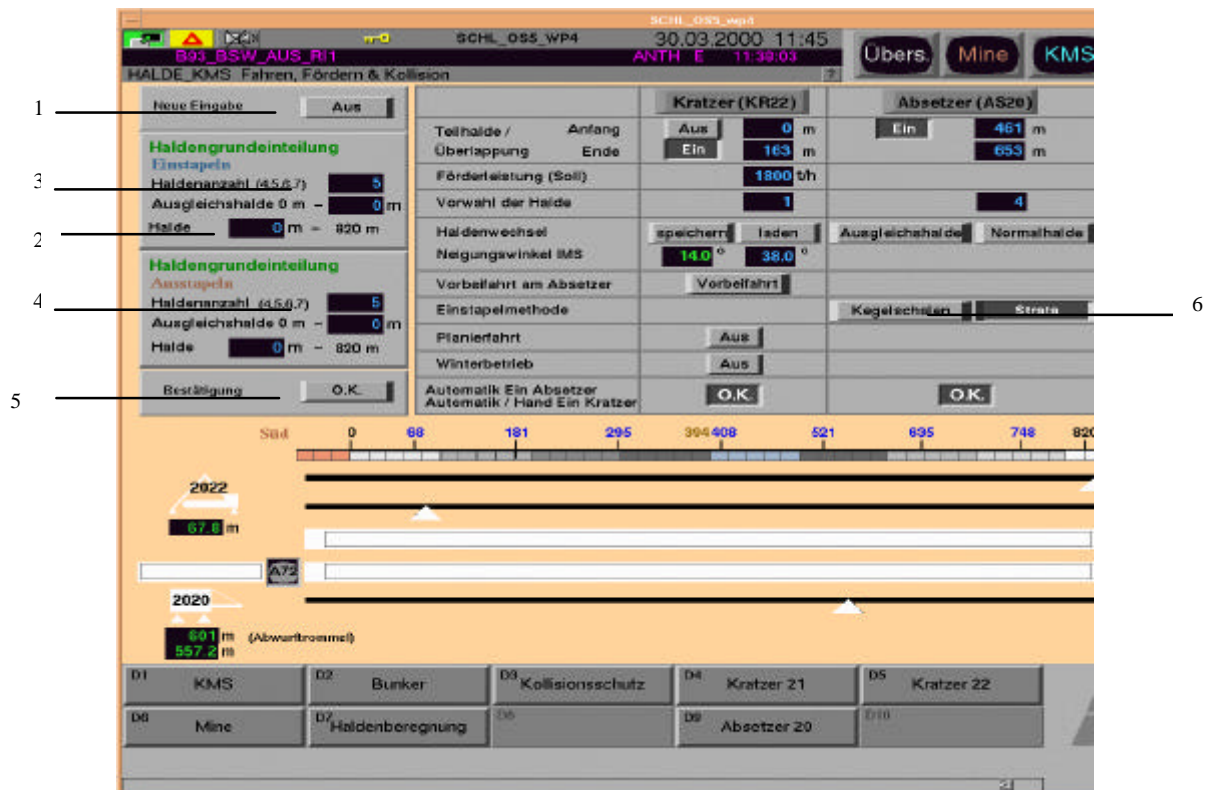## Stacking by STRATA method

Reclaiming operation of portal-type scraper

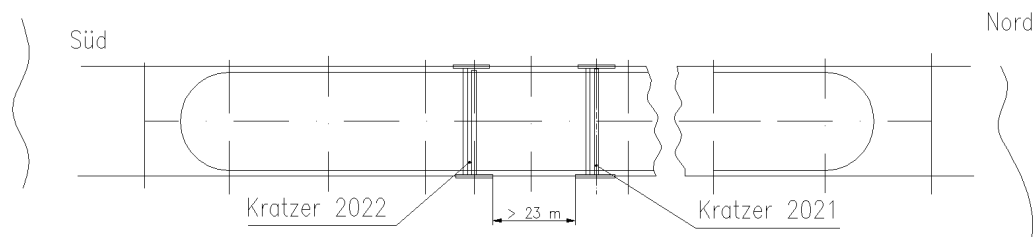## Salient features of stockpile technology

- Two stacking methods are possible
  - Strata method
  - Cone-shell method

- Free choice of stacking length

- Virtual division of the pile into 4 to 7 sections

- Simultaneous operation of all three machines on the same pile with perfect anti-collision protection

- Possibility to build a separate pile for extreme lignite qualities

- Relocation of the stacker/reclaimer from the regular to the separate pile and vice versa

- The pile of a total length of 820 m is divided into 4 to 7 virtual sections of the same capacity. Stacking of the whole pile with its virtual sections is started by clicking a button in a computer display in the central control station.
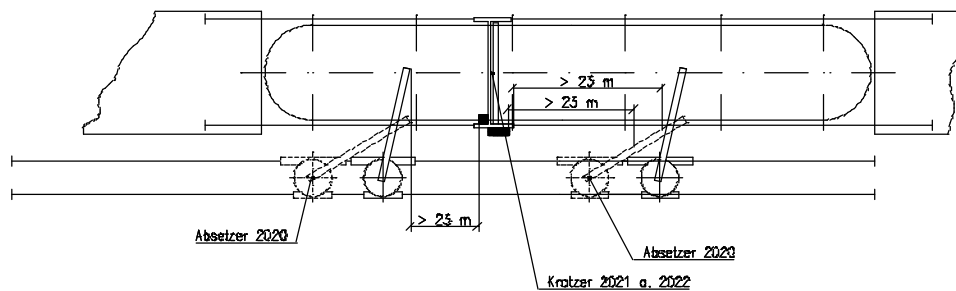

Unmanned operation of a stacker with tripper car and two portal-type scraper reclaimers

1   Button "Neue Eingabe"
Clicking the "new input" button activates further input fields. Data are enetered provided they are within defined scope.

2   Eingabefeld Ausgleichshalde – Einstapeln
The "separate pile" button opens the possibility to build another pile for extreme lignite qualities.
Its length is between a minimum 56 m and a maximum 113 m.

3   Eingabefeld "Einstapeln Halde"
The virtual sections are entered in the "stacking" field. There is a choice from four to seven sections.

4   Eingabefeld "Ausstapeln Halde"
The "reclaiming" field contains, like the "stacking" field the chosen virtual piles. Changes are only possible when a started cycle is finished. Reclaiming follows the pattern of stacking.

5   Button Bestätigung "O.K."
"OK" button confirms inputs

6   Button "Strata" / "Kegelschalen"
"Strata / cone shell" button allows choice between two stacking methods.

Anti-collision scheme
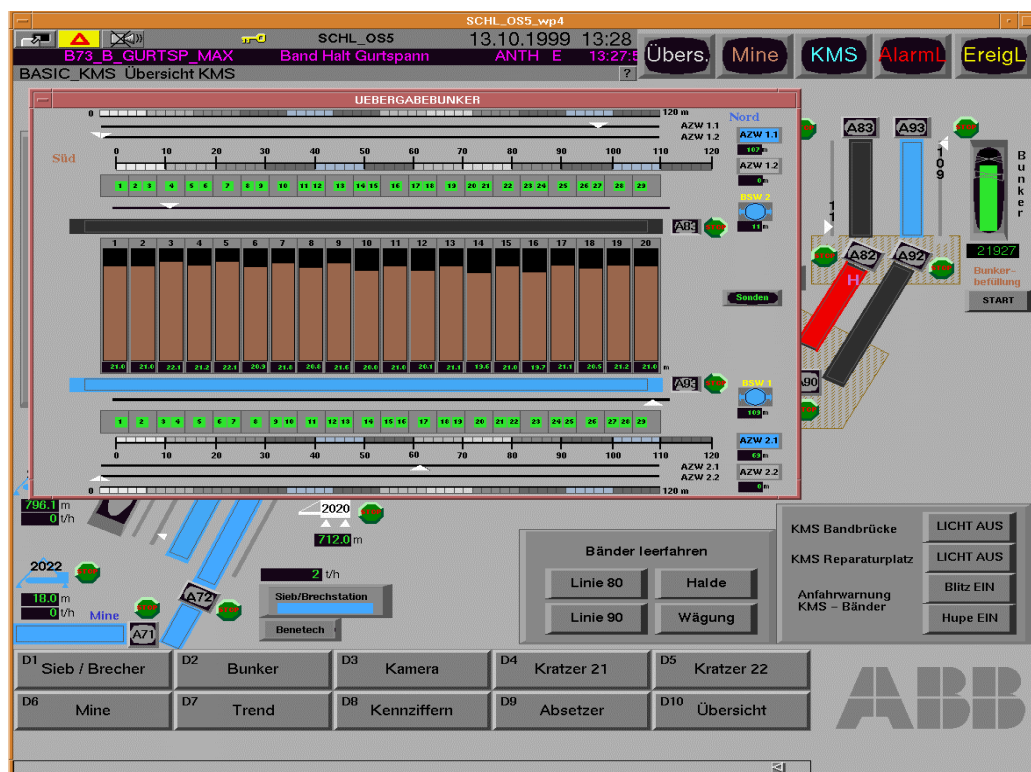

Clearance for portal-type scraper reclaimers working in parallel

Clearance for a portal-type scraper reclaimer working in front or behind the stacker

Bunker filling

"Transfer bunker" display in central control station

Stand-by lignite bunker in power station area

Tripper car Gbf 83/93 with bunker slot