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The regularities of changes ore composition Ingulets' ore mining and processing works

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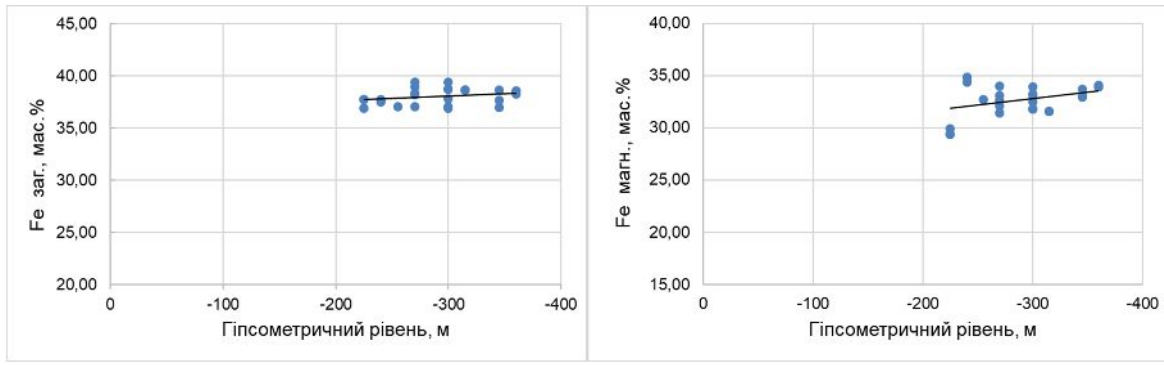
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Abstract. The Inhulets'ke deposit of low-grade magnetite ores (magnetite quartzites) is characterized by a complex structure of productive series, which includes five ferruginous (from the second to the sixth) and four schistose (from the third to the sixth) horizons of the Saksagan suite of the Krivy Rih series. All of them are stratigraphically tied: the first ore variety corresponds to the sixth ferruginous horizon; the second one to the fifth ferruginous horizon; the third one to the fifth schistose horizon; the fourth one to the fourth ferruginous horizon; the fifth one to the combined rock mass of the second ferruginous and also the third, the fourth schistose and the third ferruginous horizons; the sixth one is tied to the central part of the second ferruginous horizon; the seventh one to the lower part of the second ferruginous horizon. Stratigraphic control of determining varieties of ores defines the high level of heterogeneity of each variety by mineralogical, chemical, structural, textural indicators, i.e. by parameters, which determine the main indicator of iron ore raw materials that is ore dressability. All this requires updating ores classification, which must be based on the material rather than stratigraphic characteristics of ore deposits. The results of studying the chemical composition variability of ores during 2011-17 showed a steady tendency to increase the indexes of total iron content in ores ($Fe_{tot.}$) and iron content in the magnetite ($Fe_{magn.}$) with the growth of mining operations and the depth of working out ore deposits. The reason is iron repositioning from the crust of weathering to the hypergenetically unstable magnetite ores of deep (over 250 metres) hypsometric horizons, as well as iron redistribution in the process of folding between the limbs and the trough of the Lichmanivska syncline which is the main geological structure of the deposit.

Key words: banded-iron formation, Kryvyi Rih basin, magnetite quartzites, mineral composition of ores, ore formation conditions, classification of ores.

) (- ,
) , .
 (Belevtsev, 1962),
 1961 .;
 1) 68 .% (65 .% (2).
 [Ahkozov,
 1982, Pedan, 1973]. 2011
 () 2017 .
 () ,
 - ().
 (Fe)
 (Fe) –
 400) (-)
 60 ,
 (Evtexov 1989, Kalyaev 1965,
 Kushev 1972, Pirogov 1975).
 (10)
 [Belevtsev
 1962, Eliseyev, 1961].
 :
 (Fe) 35 40
 .%, – 38,00 .%;
 (Fe) 29
 35 .%, 32,68 .%
 (. 1). 2011-17 . 2012-17 .
 (. 1).



. 1.

(Fe заг. -)

(Fe магн. -)

(Pedan 1973, Hodyush 1967)

(Belevtsev 1962, Evtekhov 1989, Eliseyev, 1961, Kalyaev 1965, Kushev 1972, Pirogov 1975).

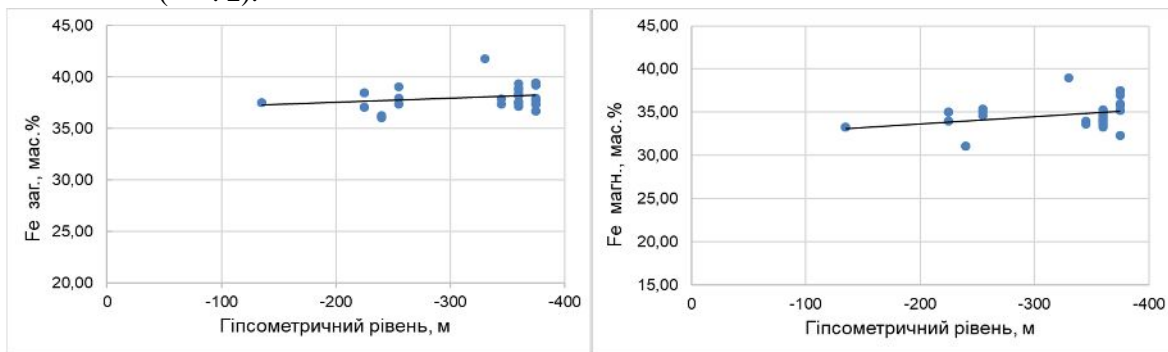
36 42 .%,
38,02 .%;
31 39 .%,

- 34,53 .%.

30 37 .%
- 34,04 .%;
- 19 31 .%,
- 26,44 .%.

(. 3).

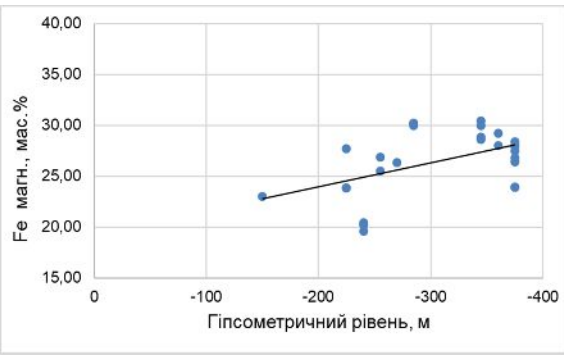
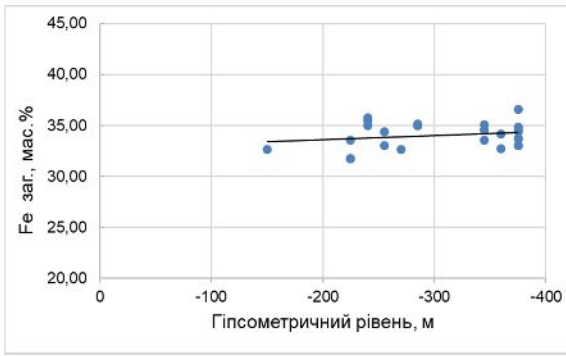
(. 2).



. 2.

(Fe заг. -)

(Fe магн. -)



.3.

(Fe заг. -)

(Fe магн. -)

V.

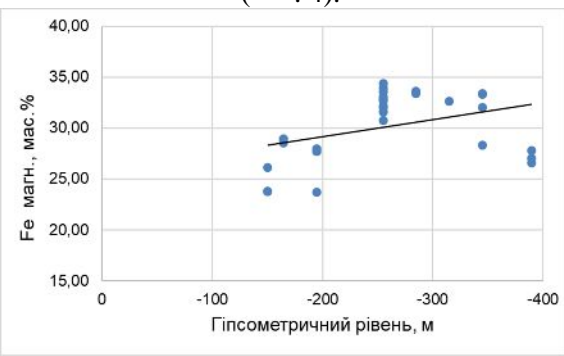
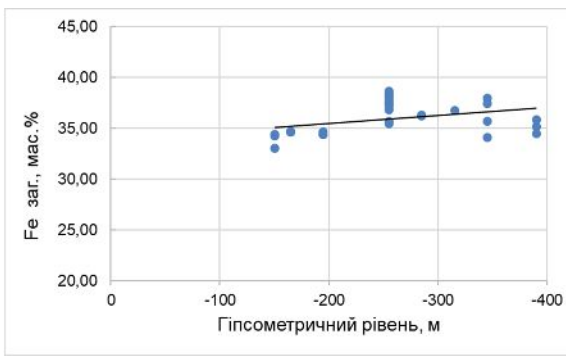
(Pedan 1973, Hodyush 19670).

30 40 .%
 - 35,89 .%;
 - 15 35 .%,
 - 30,19 .%.

V

(10)

(.4).



.4.

(Fe заг. -)

(Fe магн. -)

V

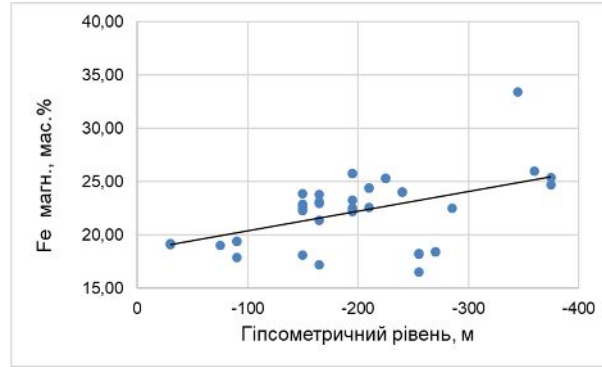
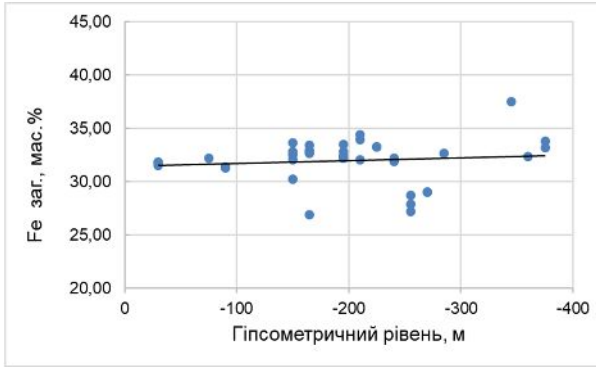
V.

V

V
25 35 .%

- 31,92 .%;
- 15 26 .%,
22,04 .%.

(.5).



.5. (Fe . -)

(Fe . -) V -

VI.

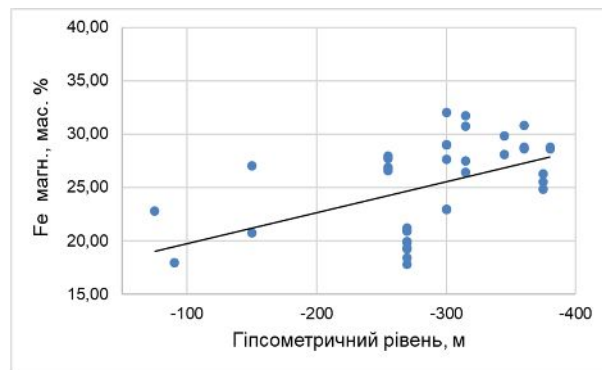
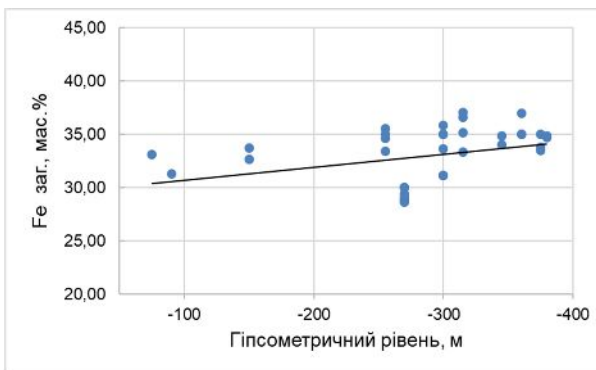
V) (VII) : 1)
Fe , V
20 .%; 2)
V ,

VI

25 37 .%
33,00 .%;
15 26 .%, 25,19 .%.

(Pedan 1973, (.6).

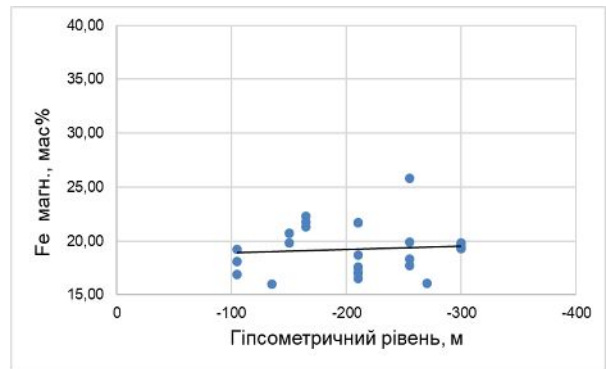
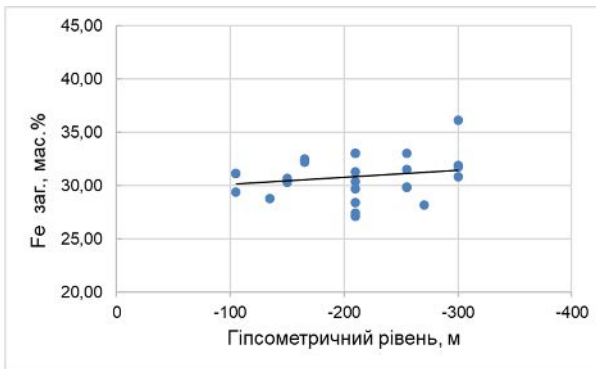
Hodyush 1967).



.6. (Fe . -)

(Fe . -) VI -

VI .
 VI Fe (Fe)
 20 .% (30,83 .%;
 25 .%). - 15 26 .%,
 VII 19,23 .%.
 VII
 (Pedan 1973, Hodyush 1967).
 ; 1)
 ; 2)



.7. VI (Fe заг.)

(Fe магн.)

70- (+60 -100) (-250);
 (Tokhtuev 1973).

1. (Fe) (Fe).

2.

3.

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