WATER RESOURCES BOARD

WELL RECORD

SHEET 1

W.R.B. REF. No. NZ 71/15

R.A. LICENCE No.

1. WELL IDENTITY

NATIONAL GRID REFERENCE NZ 768 181

Well at Boulby Mine No 1 shaft

I.G.S. REF. No.

RIVER AUTHORITY

Town Staithes

HYDROMETRIC AREA

County Yorkshire

SUB-CATCHMENT

Owner of well Cleveland Potash Ltd

Well made by consortium Date of sinking 1969-70

Information from publications Date received April 1975

2. WELL DESCRIPTION

Level of ground surface ..... m. If well top is not at above* ..... m.

above sea level (O.D.) ? +c.105 ft. ground level how far below ..... ft.

Shaft 1150 m. deep; Diameter at top 5510 mm.; at bottom ..... mm.
..... ft. ..... in. ..... in.

Bore ..... m. deep; Diameter at top ..... mm.; at bottom ..... mm.
..... ft. ..... in. ..... in.

Details of headings .....

DETAILS OF PERMANENT LINING TUBES

Length ..... m. Plain ..... ft.; Diam. ..... mm. ..... in.; Length Slotted ..... m. ..... ft.; Diam. ..... mm. ..... in.; Top ..... m. ..... ft. above* below surface

Length ..... m. Plain ..... ft.; Diam. ..... mm. ..... in.; Length Slotted ..... m. ..... ft.; Diam. ..... mm. ..... in.; Top ..... m. ..... ft. above* below surface

Length ..... m. Plain ..... ft.; Diam. ..... mm. ..... in.; Length Slotted ..... m. ..... ft.; Diam. ..... mm. ..... in.; Top ..... m. ..... ft. above* below surface

Details of well screen .....

DETAILS OF REST WATER LEVELS DURING CONSTRUCTION

Water struck at depths of ..... below well top

Rest level of water ..... m. ..... ft. above* below well top O.D.* when bore ..... m. ..... ft. deep. Date

Rest level of water ..... m. ..... ft. above* below well top O.D.* when bore ..... m. ..... ft. deep. Date

Rest level of water on completion of bore ..... m. ..... ft. above* below well top O.D.* when bore ..... m. ..... ft. deep. Date

Method of drilling .....

Brief details of well development e.g. acid treatment etc. .....

* delete as applicable

DETAILS OF PUMPING TEST

Water level depressed from ..... m. / ..... ft. above* / below well top to ..... m. / ..... ft. below well top, pumping at ..... l/s / ..... galls/hr.

Water level depressed from ..... m. / ..... ft. above* / below well top to ..... m. / ..... ft. below well top, pumping at ..... l/s / ..... galls/hr.

Water level depressed from ..... m. / ..... ft. above* / below well top to ..... m. / ..... ft. below well top, pumping at ..... l/s / ..... galls/hr.

Suction at ..... ft. below well top. Capacity of pump ..... l/s / galls/hr. Test from ../../19.... to ../../19....

DETAILS OF PERMANENT PUMPING EQUIPMENT

Make and/or type ..... Motive Power .....

Capacity ..... l/s / galls/hr. Suction at ..... m. / ..... ft. below well top.

Amount pumped ..... m^3/day* / galls/day. Pumping for ..... hrs./day.

Estimated consumption ..... m^3/week* / galls/week ..... m^3/year* / galls/year

3. WELL DATA

WELL USE. Abstraction ☐, Recharge ☐, Observation ☐, Disused ☐, Filled-in ☐ Mine shaft

WATER USE. Public Supply ☐, Industrial ☐, Irrigation ☐, Agriculture ☐, Domestic ☐, Unused ☐, Misc. ☐

WATER LEVEL OBSERVATIONS

	Rest Water Level	Pumping Water Level	Depression	Rate of Pumping	Date
①	..... m. O.D. / ..... ft.	..... m. O.D. / ..... ft.	..... m. / ..... ft.	..... l/s / ..... galls/hr.	.....
②	..... m. O.D. / ..... ft.	..... m. O.D. / ..... ft.	..... m. / ..... ft.	..... l/s / ..... galls/hr.	.....
③	..... m. O.D. / ..... ft.	..... m. O.D. / ..... ft.	..... m. / ..... ft.	..... l/s / ..... galls/hr.	.....
④	..... m. O.D. / ..... ft.	..... m. O.D. / ..... ft.	..... m. / ..... ft.	..... l/s / ..... galls/hr.	.....

GEOPHYSICAL DATA AVAILABLE

Resistivity ☐ Conductivity ☐ Temperature ☐ Any other logs .....

PARTIAL ANALYSIS DETAILS In milligrams per litre

Date	TDS	Tot H	Carb H	Non-Carb H	Alk	SO4	Cl	E.C.
							NaCl 16%	

Site marked on: 1 inch (print) ....., 1 inch (master) ....., 2½ inch ..... (use symbol and give data)

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SHEET 2

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4. HYDROGEOLOGY

Topography AT WELL SITE

Local depression [ ], Flat surface [ ], Hill top [ ], Hillside [ ], Valley bottom [X], Terrace [ ]

MAJOR AQUIFER Hunter Sandstone Lithology sandstone

Depth to top of aquifer 625 m. / ..... ft. Thickness penetrated 305 m. / ..... ft.

Top of aquifer ..... m. / ..... ft. AOD* / BOD Total thickness of aquifer ..... m. / ..... ft.

Coefficient of storage ..... Transmissivity ..... $\frac{m^2/day^*}{galls/day/ft.}$

MINOR AQUIFER ..... Lithology .....

Depth to top of aquifer ..... m. / ..... ft. Thickness penetrated ..... m. / ..... ft.

Top of aquifer ..... m. / ..... ft. AOD* / BOD Total thickness of aquifer ..... m. / ..... ft.

Coefficient of storage ..... Transmissivity ..... $\frac{m^2/day^*}{galls/day/ft.}$

ADDITIONAL NOTES:

Laboratory determinations of the radial and vertical permeability varied from 10^{-4} to less than 10^{-10}.

Shaft sunk by ground-freezing method, lined by double steel sandwich with centre grouted. Calculated inflow to unlined shaft estimated between 6.8 and 20.5 Ml/d

For data, see:

Cleasby, J.V., Pearse, G.E., Grieves, M., and Thorburn, G. 1975. Shaft-sinking at Boulby mine, Cleveland Potash Ltd. Trans Instn Mining & Metallurgy, Section A, Vol. 84.

* delete as applicable

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5. STRATA

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS METRES	DEPTH METRES	DEPTH FEET	IN
Drift	Boulder clay	30	30		
Lias	mudstones, siltstones and shales	320	350		
Rhaetic	shale and sandstone	15	365		
Keuper Marl	siltstone, mudstone and shales, with associated evaporites (mostly dolomite and anhydrite)	260	625		
Bunter	jointed and locally fissured sandstone with relatively impervious mudstones	305	930		
? Permian	silty mudstone	122	1052		
Permian	Upper Halite	43	1095		
	Anhydrite	9	1104		
	mudstone with halite	11	1115		
	Boulby Potash (	4.6	1119.6		
	Boulby Halite (Middle Halite)	40.4	1160		
	Main Anhydrite	touched			

British Geological Survey