

Monsanto Chemical Plant – Well Field

$$\text{ARG. GRADIENT} = \frac{1232 - 1146 \text{ ft}}{7200 \text{ ft}} = \frac{91 \text{ ft}}{7200 \text{ ft}}$$

$$\text{GRAD} = 0.013$$

SE 1450

DTW 200

240

SE 1420
DTW 196

SE 1416
DTW 201

SE 1413
DTW 208

SE 1399
DTW 233

Orphanage

1207

SE 1417

DTW 210

1200

H.O. = 7,200 ft

1163

SE 1402

DTW 239

1160

SE 1400
DTW 254

1146

1140

SE 1398
DTW 267

1131

0 1000 ft

$$Q = 4.7 \times 10^5 \text{ GADAY}$$

SE = surface elevation in ft AMSL

DTW = depth to water (ft)

$$Q = KIA = \left(10^{-2} \frac{\text{mi}}{\text{sec}} \right) \left(60 \times 10^3 \frac{\text{ft}}{\text{mi}} \right) \left(24 \frac{\text{hr}}{\text{day}} \right) \left(1 \frac{\text{in}}{\text{hr}} \right) \left(0.013 \right) \left[20 \frac{\text{ft}}{\text{in}} \left(\frac{1 \text{ in}}{3.28 \text{ ft}} \right) \right] \left[8500 \frac{\text{ft}}{\text{in}} \left(\frac{1 \text{ in}}{3.28 \text{ ft}} \right) \right] \left(264 \frac{\text{GAL}}{\text{in}^3} \right)$$

- Homogeneous Aquifer
- UNCONFINED
- SAND & GRAVEL
- Strata thickness = 20 ft
- Hydraulic Conductivity = $10^{-2} \frac{\text{cm}}{\text{sec}}$

TASK 1 GW Contour 20 ft C.I.

TASK 2 Flow Vectors (4 lines)

TASK 3 CALCULATE AVG. HYDRAULIC
GRADIENT ACROSS SITE

TASK 4 ASSESS RISK TO DRINKING

TASK 5 DETERMINE TOTAL GROUNDWATER
DISTANCE ACROSS THE

MAP WIDTH

Answer in $\frac{\text{ft}}{\text{DAY}}$