

REPORT No. 8a

January 2010 (updated from 2004)

MINERAL EXTRACTION and conservation in EAST SURREY

This report is prepared for the Reigate Society in response to continuing complaint and concern about the lowering of the water table and consequent draining of marsh and wetland SSSI areas that are close to deep sandpit mining operations in and around the Reigate District.

1.0 The PROBLEM SITE at Reigate Heath Wetland (SSSI.)

1.1 Reigate Heath; marsh at Skimmington Grid ref; TQ 524200; 149800; has dried out and trees have died (OS. elevation 65 m approximately)

1.2 Reigate Heath; Marsh; NW of Windmill Grid ref; TQ 523200; 150150, has dried out and plants have died (elevation 60 m approximately)

2.0 OTHER PROBLEM SITES

2.1 **Nutfield Marsh,** Grid ref TQ 530100; 15050, has dried out (elevation 85m approx)

2.2 **Bletchingley Golf course,** Grid ref TQ 533300; 151500 the pond is low or dries (elevation 105m approx)

2.3 **North Park / Stangrave Hall Godstone,** Grid ref TQ 534000; 151400 the stream is low or dry (elevation 100m approx)

2.4 **West Reservoir Godstone,** This reservoir contained a water reserve in 1968 but was dry at the last inspection.

3.0 The problem is mostly caused by the practice of pumping dry the deep sandpits, discharging the water and silt to waste in the local streams thereby lowering the water table and reducing the areas water reserves in the wetland marshes

3.1 This pumped water discharge carries sandy silt that blocks culverts and mill ponds .

Fine Dry Sand blown from pits and conveyor belts present a **pollution and dust problem.**

3.2 The Bletchingley to Stangrave sites refer to a watershed draining into the Leigh Mill ponds Gibbs Brook and River Eden / Medway valley and any conservation of water here is likely to benefit the population served by Bough Beech reservoir. The restoration of the water table at Bletchingley will need particular care and attention..

3.3 **Buckland (Mole Valley)** The processing plant is located towards the bottom of Park Pit and pumping from the pit into the Shag Brook rather than recycling appears to be necessary to prevent the flooding of the Plant, in any event the continual lowering of the water level seems to be the cause of the lowered water table under the adjacent **Reigate Heath Marsh SSSI** by 7 to 9 meters.

3.4 **Because little or no action has been taken -(since the previous complaints and Reports)- to restore the water table as suggested on page 1 -and as the sand pits may be nearing exhaustion the restoration of the water table to previous levels and the repair of the adjacent SSSI needs to be given urgent priority.**

3.4 The Institution of Civil Engineers Reports that “Water Resources in the south east will be

unable to cope with the demand from the proposed 200,000 + new homes announced by the government” (ICE NEWS 06/05/2004.)

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MINERAL EXTRACTION & WATER SUPPLY in East Surrey

OBJECTIVE :- To review the methods of Sand Quarrying and subsequent filling of some pits with contaminated household and other waste. The effects that the process has had on the Environment and suggest remedial measures required to restore the lowered water table at Reigate Heath SSSI and other sites for the benefit of the community.

A SUGGESTED METHOD of

OBJ:

Other Objectives.:-

- * The restoration of the water table and the Flora and Fauna on **Reigate Heath Marsh SSSI**, other common land areas and pastures (which have been drained and left dry)
- * The proposed Balancing Ponds to benefit the environment by;-
 - (i) Holding storm water flow and reducing the risk of flooding.
 - (ii) Supplying Mill Ponds for future power generation options.

M25 Motorway (Tandridge District) **OBJ**

3.5 Fig 1. (above) The source of the Gibbs Brook /(River Eden) , originally flowed East along Green Lane ditches towards the Big Pickle but has been diverted via the Kitchen Copse route to the Redhill Brook /(River Mole). The flow of this spring to the Gibbs Brook needs to be **restored** (The point being that the Eden River is used to recharge the Bough Beech Reservoir that in turn is used for our potable water supply).

4.0 SAND RESOURCES in EAST SURREY:

4.1 The Southern side of the valley formed by the Chalk North Downs Escarpment and the Lower Greensand Ridge to the south is mostly comprised of the yellow quartzose sand in the Folkestone Beds and the coarser materials held in the Sandgate and Hythe Beds. Fullers Earth is also present in the Sandgate Beds. This delightful valley and unique Geological structure extends from the Surrey Hills in the West and follows the line of North Downs escarpment through Kent to Folkestone and the sea.

4.2 A typical section across this valley is shown below ;-

5.0 WASTE DISPOSAL

5.1 Dry or nearly dry Pits and Quarries in the Lower Green Sand at Oxted, Bletchingley, Nutfield, and Reigate have been used by the London Boroughs and others for the disposal of household waste. Before commencing these filling operations the floor of each quarry is normally lined with sheet and or clay to prevent contaminated effluent from the waste leaching into the sand aquifer and the deep pumped water supply wells. It is now suggested that the clay linings may break down and that the waste pollutants will remain active longer than previously anticipated.

However a lowered water table can encourage the flow of pollutants from a waste filled pit through the sand aquifer to water supply wells.

Effluent discharged from waste pit sites at ground level can be treated in treatment works or reed beds. Methane gas is vented to atmosphere, burnt, or can be used for heating depending on the economics of the process.

Recovery, Composting and perhaps Incineration with Power Generation is now considered to be a more satisfactory method for dealing with the problem. Some thoughts and options are set out below.

6.0 FUTURE SAND EXTRACTION IN SURREY.

**The following comments are only valid if it is decided at some date in the future that;-
“In the National Interest Sand Extraction will proceed at the valley sites in Surrey”**

7.0 TRANSPORT of SAND PRODUCTS.

7.1 It was previously noted that there were or are existing sand processing works near,-

*Clackets Lane, Westerham (South of the M25 Service Area)

*Holmthorpe Redhill (adjacent to London/Brighton railway and M23)

*The Tapwood Quarry and others (south of the Reigate/Guildford Railway)

7.2 It has been proposed that material excavated from a wet pit or quarry be transported to the processing works plant by Pipe and that Pipe be used rather than road transport, or conveyor on the grounds of Noise, Accident reduction, blown sand pollution and high road maintenance costs resulting from the abnormal traffic.

7.3 It is suggested that any new processing works approved in the valley between Tandridge and Guildford, should be provided with Railway sidings for the transport of products by rail to the Industrial Manufacture. Again and only if considered to be in the national interest night time direct access to the M23 & M25 be provided for sites further East (ie. Where proposed mineral extraction sites are adjacent to or nearly adjacent to the M23 & M25 Motorways).

8.0 TRANSPORT of WASTE.

8.1 It is suggested that in view of the proposed large population expansion, road transport problems and costs, energy consumption and carbon emission problems; thought be given to a plan for the location of Waste Transfer Stations at Rail Sidings so that consolidated and compacted waste can be transported by rail at night to a Cement Manufacturing Rotary Kiln (Ref; NCE 24/6/2004 & Euro Protocol) or large Power Generating Incinerators located where the resulting cementing ash or clinker can be utilised in Construction Works (such as coastal defence

and other improvement programmes - see reports Ref LDF Nos. 6 &7 }

8.2 Recovered materials such as Paper, Metals, Plastics and Oils might be factory reprocessed after being moved at night by rail when the Railway network is under-utilised.

9.0 THE OPERATION of NEW SANDPITS

It is suggested future Planning approval be conditional on the maintenance and restoration of the water table levels and the conservation of the water resource by:-

9.1 Considering the use of alternative methods of working including the use of suction dredgers in the wet and the termination of the practice of pumping deep sandpits dry when excavating near streams in the valley bottom.

9.2 Considering the professional landscaping and replacement tree planting at Mineral Excavation sites, including the provision of Balancing Ponds, Weirs , Streams etc.

9.3 The establishment of adequately funded TRUSTS to ensure the proper design, landscaping, construction and business management of the resulting lowered valley sites rather than allow problems resulting from the sale or abandonment of pits being left as at present with others or the SCC. .

9.4 The proper restoration of existing SSSI and other sites.(**see mineral consultation documents attached**)



Fig 3 Glass sand quarry and **lowered valley floor** (Folkestone beds Bletchingly)

10 RECOMMENDATION :-

10.1. That paragraph 9.0 above be implemented.

10.2 That diverted streams & spring sources be restored.

10.3 That the REIGATE SSSI water table be restored . If necessary by the implementation of a Scheme similar to that shown on the cover of this document.

10,4 That permission for further Mineral Extraction be withdrawn / withheld until the necessary undertakings and guarantees have been funded and or implemented.

**J.M.Chittenden Oct/2004. (updated March/2005 & 14.01.06 & May 2008 & Jan 2010)
For and on behalf of the Reigate Society**