1. PROPOSAL REF 130306/SAB/FXW/ARW

13th March 2006 130306/SAB/FXW/ARW

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Hollingwood
Chesterfield
Derbyshire
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Dear John,

FORMER ALBRIGHT & WILSON WORKS, WHITEHAVEN: SITE INVESTIGATION IN DRAINAGE LAGOON PHASE 2 AND "TPH HOTSPOT" AREAS

1.0 INTRODUCTION

This letter proposal presents the objectives, scope, schedule and cost for URS Corporation Ltd (URS) to provide a focused soil and groundwater investigation in the phase 2 drainage lagoon, and the "TPH hotspot" areas, both located in the southern part of the Whitehaven site. This proposal was requested during a discussion between John Moorhouse (Rhodia) and Alistair Wyness (URS) on Friday 10th March 2006.

2.0 PROJECT BACKGROUND

Phase 2 Drainage Lagoon

URS understands that surface water drainage attenuation ponds are being constructed in two phases in the southern part of the Whitehaven site. Their purpose is to drain the southern catchment area of the site into Sandwith Beck, providing flood storage and preventing local flooding on the site. URS are currently undertaking site investigation work in the area of the Phase 1 lagoon, adjacent to the water treatment works.

The Phase 2 lagoon is within the area designated by Copeland Borough Council as statutory "Contaminated Land" under Part IIA of the Environmental Protection Act 1990, subsequently declared a "Special Site" and now regulated by the Environment Agency. As a condition of the planning permission for the lagoon, a Remediation Statement must be prepared by the Applicant (Rhodia) and approved by the Planning Authority. This Remediation Statement has been drafted by URS under a separate commission from Rhodia, and includes a requirement for additional investigation. This proposal is for that investigation works, in accordance with the Remediation Statement. It should be noted that the Remediation Statement has yet to be approved by the Environment Agency. URS has scoped the works below in accordance with its expectations of Agency requirements.

During the site investigation works on the Phase 1 lagoon, URS encountered a live electricity cable at a location which had been cleared as free from services by Rhodia. We are currently seeking

additional information from the site, and hope to be able to agree a safe method to proceed with Rhodia and Huntsman. This proposal does not include the additional work which will be required to produce a safe working method, because of time constraints. However, before commencing works the issue of safe drilling will have to be resolved. To anticipate the additional costs which are likely to be incurred as a result of the possible presence of services in the area, URS has added an allowance for standing time and hand excavation to the drilling budget.

"TPH hotspot"

The TPH hotspot area is an area of potential contamination identified during the Phase II site investigation works undertaken by URS in 2005 (report ref 44319623/R2037), and illustrated on Figure 12 of that report. The area lies immediately north of the Ufex landfill, and is east of the Phase 2 drainage lagoon (and potentially is within the lagoon catchment). It was identified in 2005 as an area which potentially poses a risk to human health and groundwater. Additional investigation is proposed in the Remediation Statement for the site (currently in preparation). The scope of works proposed here is aimed at gaining sufficient data to enable a remediation strategy to be prepared. As above, the Remediation Statement has yet to be approved by the Environment Agency.

3.0 OBJECTIVES

Phase 2 drainage lagoon

- assess current soil and groundwater quality within the shallow strata in the vicinity of the pond area;
- understand the geology of the shallow strata, in order to better understand the flow of groundwater in the vicinity of the pond area;
- understand the long term groundwater quality in the vicinity of the pond area; and
- integrate the findings of this assessment with the site investigation for the Phase 1 lagoon. This will permit a full assessment of the potential influence that the drains may have on channelling potentially contaminated groundwater, held within the shallow strata, into the drainage pond
- meet the Environment Agency's requirements for remedial action under Part IIA (in so far as there is requirement for additional assessment)

"TPH hotspot"

- gain access to soils beneath concrete slabs that were not accessed during the previous investigation
- provide soil sampling coverage adequate to develop a remediation strategy
- understand geology in the shallow strata to enable assessment of potential for migration of contamination to the proposed drainage lagoons
- get a better understanding of groundwater flow patterns in the shallow strata in this area
- meet the Environment Agency's requirements for remedial action under Part IIA (in so far as there is requirement for additional assessment)

4.0 SCOPE OF WORK

The scope of work required to fulfil the objectives has been subdivided into the following tasks:

- Task 1 Preliminary Works
- Task 2 Site Works
- Task 3 Laboratory Testing
- Task 4 Reporting

The scope of works for each task is provided below. To keep costs to a minimum, we have scheduled investigation of the two areas simultaneously; they will however be separately reported to avoid confusion with respect to the planning permission conditions for the drainage lagoon.

1.1. Task 1 - Preliminary Works

Prior to commencement of sampling, preliminary work will need to be undertaken, as follows:

- update existing Health and Safety Plans for the proposed works;
- arrangement of sampling equipment and mobilisation of URS personnel;
- liaison and mobilisation of a URS approved subcontract drilling firm, groundworks contractor, subcontract laboratory, including arrangements for the delivery of appropriate sample containers; and
- health & safety induction at the site, if necessary, prior to commencing sampling.

1.2. TASK 2 – Site Works

The environmental investigation is expected to comprise of the following:

Drilling Works

It is proposed that up to 3 boreholes are drilled in the vicinity of the lagoon, and 4 boreholes in the TPH hotspot area. Each borehole will be drilled to a depth of up to 8m below ground level (bgl) depending on local subsurface conditions, using a 'Windowless Sampler' drilling rig, or suitable equivalent, over a period of 3 days. Please note that following the trial pitting on the Phase 1 drainage lagoon, we have increased the target depth to 8m in order to have the best chance of encountering groundwater. We have found strata to 4m to be almost completely dry in the Phase 1 lagoon area. We have also allowed for a more robust drilling rig, as we anticipate more obstructions in the TPH hotspot area.

During soil sampling, visual and/or olfactory indications of contamination in the drilling returns would be recorded by the URS field engineer. In addition, headspace analysis will be conducted on selected samples collected from regular intervals and screened using a photoionisation detector (PID meter) to assess the potential for chemical impact.

PID results would be used to select samples for confirmatory laboratory analysis. Up to two soil samples may be taken per location and it is envisaged that samples may be collected from a range of depths in an attempt to assess variations in potential contaminant levels through the soil profile.

A groundwater monitoring well will be installed at each location and installed with 35mm or 50mm HDPE casing and screen and an inert gravel pack and bentonite seal along with sealable covers. It is proposed that raised covers (top hat covers) are used which will reduce the potential for the loss of the borehole, given the likelihood of heavy plant machinery working in the area during future groundworks. In the event that a borehole is not installed (e.g. on a refusal), the location would be reinstated using bentonite, and concreted over at the surface where necessary.

Groundwater and Surface Water Sampling
Following installation, monitoring wells will be left for approximately one week in order to allow groundwater levels to equilibrate. A dipping round (measurement of the depth to water or free phase oil product below ground level) will then be conducted using an oil/water interface probe.

Prior to groundwater sampling, monitoring wells will be developed and purged of at least three times the well volume or until groundwater parameters stabilise. Groundwater parameters to be monitored on-site include pH, temperature, conductivity and redox potential. If the well becomes dry during purging and development, a sample of the recharge water will be taken.

Groundwater sampling will be undertaken using a peristaltic pump and dedicated tubing. Samples will be placed directly into laboratory supplied containers and stored under chilled conditions prior to dispatch to the laboratory.

It is proposed that a surface water sample is taken from the lagoon at the time the installed boreholes are sampled.

Trial Pitting
It is proposed that up to 3 trial pits are advanced in the vicinity of the lagoon, and 4 in the TPH hotspot area. Trial Pits will be advanced using a JCB 3CX backhoe excavator (or similar) to a maximum depth of 4m bgl depending on local ground conditions, the excavations will be logged by the URS field engineer and backfilled with arisings on completion.

Field based headspace screening and selection of soil samples for laboratory chemical analysis will be undertaken following the same protocols described for the soil bore investigation.

Levelling
A levelling survey of all boreholes relative to Ordnance Datum and the grid co-ordinates would be conducted by a specialist sub-contractor. The depth to the top of the pipe and the cover level would be measured and used in conjunction with the groundwater data to determine the groundwater flow direction.

Operational Issues
It should be noted that the URS field engineer might make minor adjustments to the scope of works at the time of the performance of the fieldwork. For example, additional soil samples may be scheduled or the analytical suite altered based upon site screening results etc. If major changes to the proposed works need to be made which may have implications to the overall costs, this will be discussed and agreed with the client prior to performance of the changed scope of works.

In developing the above scope of works, it has been assumed that the site is equipped with a water supply that the drillers can use for the washdown of equipment between the borehole locations. It has also been assumed that welfare facilities will be available for use by the field works team, including an area for the temporary storage of field equipment for the duration of the works.

No allowance has been made for the costs of disposal of waste and arisings generated from the site investigation. This would remain the responsibility of the client although URS can make suitable arrangements on behalf of the client, if required.

1.3. Task 3 - Laboratory Testing

For the purpose of consistency it is proposed to use the laboratory (Alcontrol Geochem) used in previous investigations at the site. The proposed analysis for selected soil and groundwater samples is as follows:

Analyte	Number of analyses for water	Number of analyses for soil
TPH CWG (incl BTEX/MTBE)	7	14
VOC's (target list)	4	14
EPH C10-C40	0	14
SVOCs (target list)	7	28
PCBs (7 conogers)	0	0
Leachable prep and analysis (prep+analysis for SVOCs metals TPH Cyanide TotPhosphorus and MBAS)	na	14
Metals CLEA	7	28
Cyanide (total)	7	28
Total Phosphorus	7	14
Phosphate	7	14
Fluoride	2	14
MBAS	7	28
Sulphate (water soluble)	0	28
Particle Size Distribution	na	2
pH	7	28
Total Organic Carbon	0	2
Major Cations and Anions	2	0
WAC TESTS to be put on hold	0	2

Samples will be placed in the appropriate containers provided by the testing laboratory, pre-treated with fixing reagents if required, and placed in cool boxes. Samples will be despatched from site, on the completion of site works, under chain of custody procedures by courier directly to the testing laboratory.

The laboratory (Alcontrol) holds MCERTS accreditation for *the majority of these* methods: however, please note that there are certain limitations regarding the accreditation of data by MCERTS. To highlight these URS has produced a statement that has been accepted by Alcontrol and agreed for use by its UKAS/MCERTS assessor, a copy of which is appended.

1.4. Task 4 - Reporting

On completion of Tasks 1 to 3, a separate report for each area will be generated detailing the findings of the investigation. This will include:

Phase 2 drainage lagoon

- a figure detailing the location of borehole logs and trial pits;
- a groundwater contour plot of the shallow groundwater in the vicinity of the lagoon;
- the analytical results of the soil and groundwater investigation;
- a critical review of the proposed drainage plans for the site; and
- an interpretation of the analytical results of the site investigation.

"TPH hotspot area"

- a figure detailing the location of borehole logs and trial pits;
- a groundwater contour plot of the shallow groundwater in the vicinity of the lagoon;
- the analytical results of the soil and groundwater investigation; and
- an interpretation of the analytical results of the site investigation.

One copy of each draft report will issued for review. Following receipt of any comments, a total of two bound copies of each final summary report will be issued to Rhodia.

Any proposed third party reliance on our Reports shall be subject to our written agreement and standard charges.

5.0 MANAGEMENT AND KEY PERSONNEL

It is proposed that the following key staff from the URS Manchester office are utilised to undertake this project:

- Project Director – Alistair Wyness
- Technical Director – Frank Wigley
- Project Manager – Andrew Doerr

Where possible, URS field engineers who have previously carried out fieldwork at the Whitehaven site will be utilised for this project. The project team will be supported by a number of experienced support staff at the office for administrative issues and technical illustration.

6.0 PROJECT SCHEDULE

Following receipt of written authorisation from Rhodia, mobilisation to site can occur within one to two weeks. It is preferred that the intrusive works are initiated by the end of March 2006. Allowance has been made for laboratory analysis to be undertaken on a standard turnaround time basis (usually ten working days). However, a faster turnaround time can be arranged, although this will invoke an additional surcharge to secure this service. It is anticipated that a summary report will be produced in May 2006.

7.0 COSTS, TERMS & CONDITIONS OF APPOINTMENT

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URS Corporation Ltd would like to thank Rhodia for giving us the opportunity to present this proposal. Should you have any queries or wish to discuss any aspects further, please contact the undersigned. If you wish us to undertake this work for you, we should be grateful if you would provide us with a written instruction.

Yours faithfully,
for URS Corporation Ltd

Sophie Bowtell
PROPOSAL DIRECTOR

Andrew Doerr
PROPOSAL MANAGER

APPENDIX- NOTE ON MCERTS ACCREDITATION

Where identified as such, the method used by Alcontrol for analysis of a particular set of determinands in soil is an MCERTS accredited method. However it should be noted that for a particular set of data some of the data may not always meet the precision and bias criteria as prescribed by MCERTS. This is because whilst criteria were met when the method was originally validated, specific criteria for on going AQC were not set by the Environment Agency, so that the point of reference becomes the criteria used for the original validation.

The precision and bias data for the certified reference material (CRM), used in the method may itself fall outside these criteria and as a result the samples associated with the batch in question do not strictly meet the MCERTS criteria. This issue is common to all UK laboratories although in practice this is not always reported as such. However in the interests of maintaining strict conformance with both MCERTS and UKAS BS17025 such data are flagged by Alcontrol as not claiming MCERTS, but still meets the requirements of 17025.

This should not detract from the usability of such data in terms of their application to the existing project