EAME
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Appendices

Appendix A: Contributors

This Environmental and Social Impact Assessment (ESIA) for the Khor Al-Zubair (KAZ) Oil Terminal Project, Iraq has been undertaken by Earth & Marine Environmental Consultants Ltd (EAME) on behalf of Waterway Trading Petroleum Services LLC (WTPS).

EAME acknowledges, with thanks, the following contributors:

Field Surveys Data, Research and Analysis

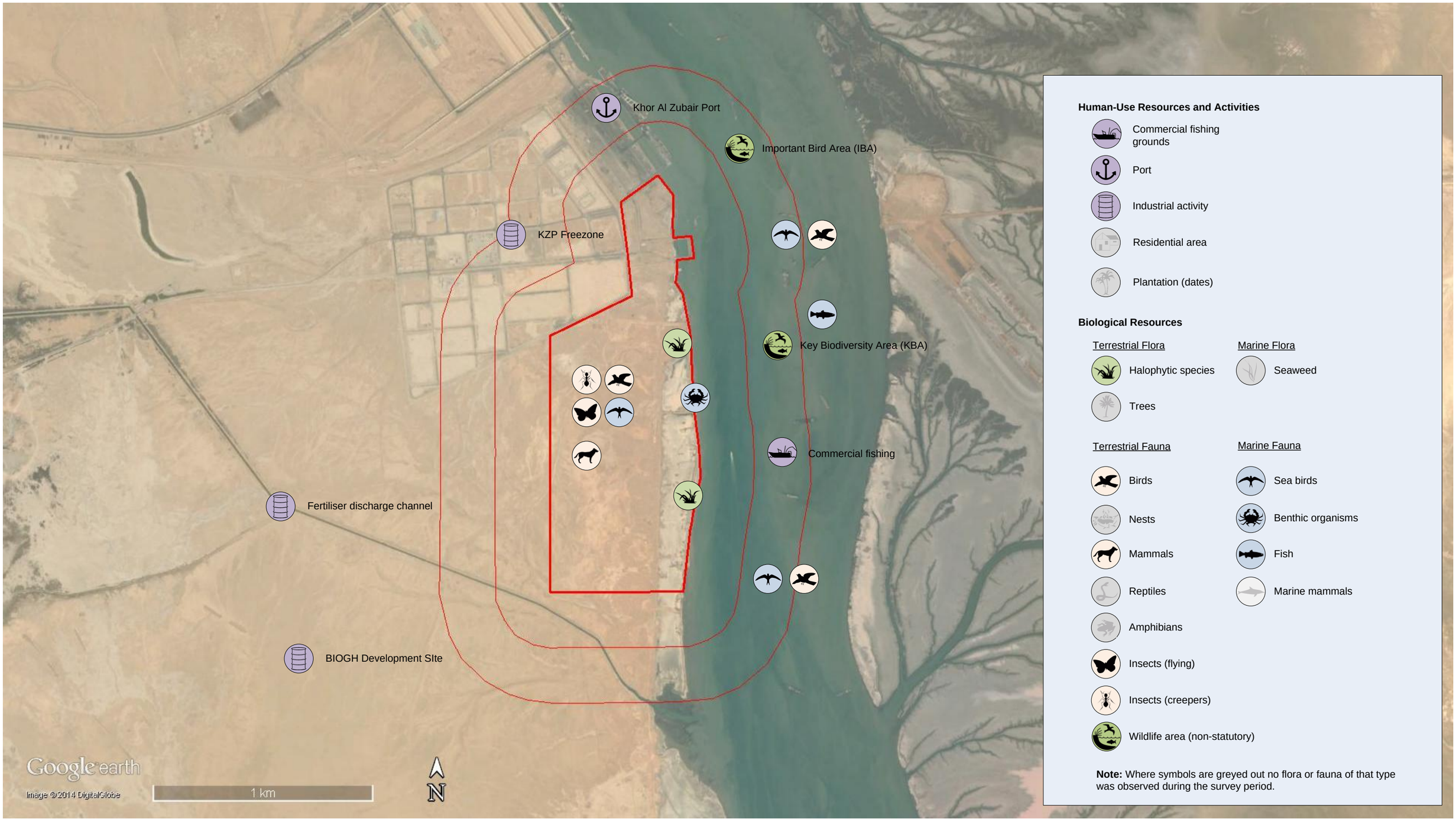
- i2 Analytical (laboratory analysis);
- University of Basra (laboratory analysis);
- SAL (laboratory analysis);
- Qassim Hameed (translation);
- WTPS (engineering design); and
- Oceanwise (tide level data).

Consultations and Discussions

- Ministry of Environment;
- Ministry of Cultural Heritage;
- General Company Ports of Iraq;
- SKA International;
- Local people who live or are employed within the project area; and
- Stakeholders listed in *Appendix C* who provided comments on the Scoping Report.

EAME is grateful for the assistance of these companies and individuals in preparing this ESIA report.

Appendix B: Constraint Map



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TITLE: **Appendix B.** Environmental Constraints	JOB REFERENCE: 014-1287	REVISIONS: No. 00 Date. 16/12/14 Description. Final for report	EAME Earth & Marine Environmental Consultants
	DATE: December 16, 2014	- --/--/-- -	
CLIENT: Waterway Trading & Petroleum Services LLC	SCALE: Not to Scale	DRAWN BY: MJS	CHECKED BY: SPR

Appendix C: Public Consultation and Disclosure

C.1 Introduction

This Appendix provides details of the stakeholder consultation carried out for the Khor Al-Zubair (KAZ) Oil Terminal Project, Iraq.

Stakeholder consultation is of crucial importance to understand how the Terminal would impact on stakeholders and to obtain their input on which impacts should be included and excluded. WTPS recognises the importance of consultation and that it is also an early opportunity for stakeholders to become better informed about the planned Terminal. Stakeholders may be considered to be individuals, groups and organisations who may be affected by the Terminal.

Information provided by the stakeholders has been incorporated into relevant chapters of the Environmental and Social Impact Assessment (ESIA), however, EAME have received only a very limited response with no substantial opinions or additional information coming forward. This low level of responsiveness is not unusual for Iraq which only has a short history and experience of ESIA's being performed and no formal requirements for public or statutory consultation. Furthermore, there are no residential communities in the area and the nearest commercial entities that could be affected are direct stakeholders in the project.

Stakeholder consultation comprised two parts:

- the development and issue of a Scoping Report; and
- the direct consultation with potentially affected communities.

C.2 Stakeholder Identification

Stakeholders were identified as a result of discussions with Waterway Trading & Petroleum Services LLC (WTPS), General Company Ports of Iraq (GCPI) and EAME's extensive knowledge of Southern Iraq. As such, a number of key stakeholder groups were developed, including:

- **National and local government authorities** including those with either a formal role in the approval process or an interest in the Terminal project;
- **Local communities**, however, it should be noted that the nearest residential dwellings are over 5km distant from the Terminal and the land in between the Terminal and these properties is similarly unused and unoccupied. Consequently, there are no residential communities likely to directly interact with the Terminal;

- **International and national NGOs.** EAME maintains a database of NGOs operating in Iraq which was accessed for this project. However, with the current humanitarian crises in Iraq, a number of the limited responses from NGOs indicated that they regrettably do not have the time nor manpower to respond in an appropriate manner;

- **Scientific and educational institutions**. EAME has a number of links with relevant people in the Basra scientific and educational community. Please note, however, that much of the literature created in recent times can be classed as '*grey literature*'.

- **Commercial organisations**. Due to EAME's extensive knowledge of the area in the vicinity of the Terminal, EAME was able to identify a number of existing and proposed commercial and industrial organisations;

- **WTPS staff members** are stakeholders in the Terminal project and will be kept informed of progress at regular intervals; and

- **Terminal project partners** are also stakeholders in the Terminal project and will be kept informed of progress at regular intervals

C.3 Scope of ESIA Consultations

The Scoping Report (*014-1287 WTPS Iraq Oil Terminal Environmental Scoping Report REV03, August 2014*) was prepared at the start of the ESIA process. It is a standalone document that describes the project, sets out the environmental issues that will be assessed through the ESIA (and those that have been screened out), explains how these will be assessed and seeks feedback from the consultees on these issues and any additional information that they have. The Scoping Report was sent to the identified stakeholders in August and September 2014. Over one hundred copies of the Scoping Report were issued, however, replies were only received from four entities, none of which provided any additional information or sought to amend the proposed approach.

C.3 Summary of ESIA Scope Consultations

As mentioned previously, the responses from identified stakeholders were very limited, however, pertinent information is presented in this section:

Dr Azzam Alwash, Founder and President of Nature Iraq, responded indicating that of any upcoming publication indicating that Khor Al-Zubair would be identified as a Key Biodiversity Area. The publication is to be published jointly with the Ministry of Environment (MoE). Dr Alwash also urged EAME to include the MoE and local fishermen within our consultation.

The Co-ordinator of Regional Organisation for the Protection of the Marine Environment (ROPME), Dr Hassan Mohammadi, declined to comment on the Scoping Report and stated that only the MoE could determine the scope of the ESIA.

Engineer Taha Yaseen Mohammed, the Director General South of the MoE, stated that the MoE is the competent authority to decide the scope of the ESIA for the Terminal, however, no other comments were forthcoming.

Dr Andreas Lueck, Senior Water Resources Expert from the Iraq office of the United Nations Educational, Scientific and Cultural Organization (UNESCO) indicated to consult with the Ministry of Water Resources (MoWR) regarding groundwater protection and hazardous waste management, however, the MoWR did not respond to the Scoping Report.

C.4 Direct Consultation

Direct consultation was also undertaken with potentially affected communities, particularly fishermen of the Khor Al-Zubair. As such, EAME interviewed the Basra Fishing Union leader and also boat owners and fishermen who operate out of the fishing port to the south of the site, fishermen encountered on-site and fish sellers in Umm Qasr and Zubair. Details of which are provided in *Chapter 9 – Socio-economic Conditions*.

C.5 Post-ESIA Consultation and Stakeholder Engagement

Assuming the Terminal project were to be approved, additional public disclosure and stakeholder engagement will be required during the construction and operation phases of the Terminal.

Appendix D: Environmental and Social Management and Monitoring Plan

D.1 Introduction

The Environmental and Social Management and Monitoring Plan (ESMMP) for the Environment and Social Impact Assessment (ESIA) summarises the organisational requirements, actions and monitoring plans that must be carried out by Waterway Trading & Petroleum Services LLC (WTPS) and their representatives, in order to meet the following objectives:

- to prevent negative impacts from occurring;
- to minimise the residual impacts to levels which are deemed acceptable; and
- to operate in conformance with National legislation as well as international best practice such as the policies of the International Finance Corporation (IFC).

The measures that are specifically outlined in this ESMMP are based upon the information gathered regarding baseline environmental and social conditions at and around the Project Site as described within the ESIA. Additionally, discussions with stakeholders were taken into consideration whilst defining these measures.

The ESMMP is a strategy that continues throughout the project life-cycle i.e. it covers both the construction and operational phases of the project. It is important that the ESMMP is flexible and is subject to frequent review and update.

An ESMMP is a comprehensive document that outlines operational policies, procedures and practices. WTPS holds the ultimate responsibility for its implementation, although specific responsibilities will be ultimately discharged by various third-party organisations. In order to ensure the stated actions are complied with WTPS will supervise and monitor third-party contractors.

The ESMMP has been compiled after consideration of, but not limited to, international standards and guidelines such as the IFC Performance Standards and the Equator Principles.

Table D.1: ESMMP Principal Standards

Equator Principles III	IFC Performance Standards (2012)
Principle 1: Review and Categorisation*	Performance Standard 1 – Assessment and Management of Environmental and Social Risks and Impacts

Table D.1: ESMMP Principal Standards	
Equator Principles III	**IFC Performance Standards (2012)**
Principle 2: Environmental and Social Assessment	Performance Standard 2 – Labour and Working Conditions
Principle 3: Applicable Environmental and Social Standards	Performance Standard 3 – Resource Efficiency and Pollution Prevention
Principle 4: ESMS and Equator Principles Action Plan	Performance Standard 4 – Community Health, Safety, and Security
Principle 5: Stakeholder Engagement	Performance Standard 5 – Land Acquisition and Involuntary Resettlement*
Principle 6: Grievance Mechanism	Performance Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources
Principle 7: Independent Review*	Performance Standard 7 – Indigenous Peoples*
Principle 8: Covenants	Performance Standard 8 – Cultural Heritage*
Principle 9: Independent Monitoring and Reporting	
Principle 10: Reporting and Transparency	
Note: * Requirements are not considered applicable to this project	

D2. Project Environmental and Social Systems

Measures are to be taken by WTPS throughout the entire life-cycle of the Project in order to ensure that the ESMMP is complied with. The measures that are to be taken are based around the following categories:

- Organisation and arrangement;
- Contractor Management Plan; and
- ESMMP Performance Monitoring.

Organisational Arrangements

During the construction phase WTPS will have contracted the responsibility for construction to a single turnkey Engineering, Procurement and Construction (EPC) Contractor and this will include full

compliance with the recommendations of the EISA, however, the overall responsibility for environmental and social compliance will remain with WTPS. In this regard an Environmental and Social Management System (ESMS) will be established by WTPS's EPC Contractor and approved by WTPS for the construction phase. The ESMS will include a Health, Safety and Environment Plan/Manual comprising the following elements (as a minimum):

- Scope of ES Management System;
- Health Safety Environment and Social Policy;
- Environmental and Social Aspects And Impacts;
- Legal and Other Requirements - likely to be developed from Chapter 4 – Policy, Legal and Administrative Framework of this ESIA and the Commitments Register as presented in *Appendix E*;
- Objectives, Targets and Management Plans;
- Organisational arrangements (*i.e.* roles and responsibilities);
- Competence, Training and Awareness;
- Communication procedures;
- Control of Project Documentation;
- Operational Control (*i.e.* work instructions, procedures management plans *etc.*);
- Emergency Preparedness and Response;
- Monitoring and Measurement (including compliance assessment);
- Non-Conformity, Corrective Action and Preventive Action;
- Control of Records;
- Internal Audit; and
- Management Review

Contractors working on the project shall revise their HSE Plans (where required) to ensure compliance with the WTPS Plan/ESMS Manual. The requirements above may well be met by existing management systems, policies and procedures used by the EPC Contractor or WTPS and do not necessarily need to be developed specifically for this project where such systems already exist.

Contractor Management Plan

WTPS will (at all times) retain responsibility for the Project and the implementation of the ESMMP. Contractors will be utilised both during the construction and operational phases of the Project with various magnitudes of responsibility, yet the one with the greatest responsibility will be the EPC contractor during the construction phase. A Contractor Management Plan (CMP) will be executed by WTPS to make certain that contractors are fully aware and compliant with the specifics of the ESMMP.

The main components of the CMP will include the following:

- Assignment and designation of those responsible for the implementation of the CMP from the senior managers of WTPS;
- Training sessions and awareness promotion activities focussing on the requirements of the CMP;
- The Specific the relevant ESMMP provisions, including requirements regarding occupational health and safety, will be included in the tender documents;
- The contractor's ability to fulfil ESMMP requirements *i.e.* sufficient skills, experience and competence will be examined as a main criterion and employed when awarding tenders;
- Each and every contract that is made will incorporate requirements regarding the relevant environmental and social risks and ESMMP requirements which are associated with the contract activities. Furthermore, they will incorporate non-compliance processes and mitigation measures (when deemed appropriate). Additionally, all contracts will stipulate that all subcontractors will be held accountable to obligations which are similar to those of the main contractor;
- All contractors will be required to ensure that all staff members are trained and skilled in the appropriate EHS topics and all activities are completed in accordance with both the Iraqi legislation and international best practices;
- The contractor will be required to demonstrate the skills, qualifications and/or working experience of his staff and sub-contractors to WTPS. The construction work force and subcontractors shall receive comprehensive H&S training at the beginning of their assignment and then on a regular basis thereafter;
- In the event that international firms are contracted and foreign workers will be involved in the project special attention shall be given to ensure that not only all Iraqi laws and regulations are followed but also relevant international ones (e.g. the international labour organisation core labour standards, working hours, overtime compensation, etc.); and

- It is the duty of WTPS to routinely monitor the performance of the contract with respect to their fulfilment of the ESMMP obligations.

Construction Environmental Management Plan (CEMP)

It has been asserted throughout the ESIA that environmental protection and pollution prevention will be managed via the implementation and enforcement of a Construction Environmental Management Plan (CEMP). This will set out specific procedures, protocols and protective measures to ensure that construction activities do not cause significant environmental impacts and that unexpected contamination (if encountered) is properly managed. Table D2 Mitigation and Management column identifies the various aspects of the construction programme that should be addressed by the CEMP.

ESMMP Performance Monitoring

It is the requirement that regular ESMMP audits are undertaken throughout the life of the Project. The audit schedule should be appropriate to the prevailing environmental and social risks posed by the Project. The ESMMP audit results shall be documented and reviewed by a senior responsible person at WTPS.

The ESMMP audit reports shall cover the status of EHS related aspects like permit compliance, non-compliance with regulatory environmental standards, root cause analysis, corrective actions as well as conformance with the ESMMP. The audits must address the performance of WTPS and any contractors and/or sub-contractors. Depending on the findings, it may be necessary to revise the original ESMMP to reflect the changing situation and/or the prevailing social environmental audit regulatory framework conditions.

D.3 Specific Mitigation and Monitoring Requirements

The specific recommended mitigation measures for stage of the project are outlined in the environmental management and monitoring matrix (*Table D2* and *Table D3*). For each item the following information is provided:

- key activities/aspects which could result in a potential impact;
- potential significant impacts of the activities;
- recommended mitigation measures;
- key performance indicators (KPIs); and
- residual impacts.

The matrix outlines specific KPIs for environmental and social performance. The contractors' plans will ensure that monitoring data is gathered and reported to WTPS.

Audits will be undertaken to track progress and performance in implementing the commitments and effectiveness of the mitigation measures. The audits will also highlight any corrective actions required.

D.4 Operations Phase ESMS

WTPS shall operate the Terminal using an environmental and social management system that is either aligned to or certified to ISO 14001.

As with the construction ESMS, the operational ESMS will provide details on the operation of the Terminal in accordance with relevant legal, regulatory and WTPS policies and standards and to implement the commitments made within the ESIA.

It will be developed prior to commencement of operations and transition plans will be developed to assist in the move from construction to operational phases.

Table D2: Construction Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Site preparation and excavation (earthworks) Movement of vehicles and construction machinery	Dust	Ensure adequate water supply on site for damping down dust. Wheel washing at the exits from construction areas where there is a potential for dust and mud to be carried on to the highway. Regular visual monitoring of construction activities to identify any significant dust sources. Water suppression in dry conditions to reduce dust emissions (use of mobile bowsers or fixed sprayers as appropriate). Appropriate speed limit applied to all construction vehicles working on the construction site. Minimising heights for any stockpiles and tipping operations. Avoid double handling of excavated material wherever practicable.	EPC	Site observations. Monitoring of PM10 dust emissions. Number of complaints.	Low level dust emissions will remain even after implementation of proposed control measures. Significant impact unlikely.

Table D2: Construction Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
		Seal or re-vegetate completed earthworks as soon as reasonably practicable after completion. Sheeting of loads during transport of dusty/friable material. Ensure deliveries of bulk cement and other similar powder materials are in enclosed tankers and stored in suitable silos with emission control systems to prevent escape of material and overfilling during delivery. Soils management plan.			

Table D2: Construction Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Movement of vehicles and construction machinery	Gaseous pollutants as a result of combustion	Exhaust emissions from vehicles should be checked as per local requirements. All plant and equipment to be maintained in accordance with appropriate legislation or manufacturers recommendations to ensure emissions to atmosphere are minimised. Engines of plant and machinery and lorries to be turned off at all times when not in use. No burning of material to take place.	EPC	Site observations. Vehicle maintenance records.	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Handling of wastewater	Pollution of adjacent surface water systems	Appropriately designed facilities and systems (*i.e.* septic tanks, excavation dewatering systems *etc.*). Wastewater treated prior to discharge Compliance with Standard Operating Procedures (SOPs)	EPC	Visual observations of unplanned releases.	None

Table D2: Construction Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
		Planned Preventive Maintenance (PPM) systems			
Storage and handling of fuels and hazardous materials	Soil and groundwater contamination	Appropriately designed facilities Primary, secondary and tertiary containment system designed to international industry standards. Compliance with SOPs PPM systems Emergency plans, procedures and equipment	EPC	Site observations Number of unplanned releases (*i.e.* reported leaks and spills)	None.
Handling and storage of waste materials	Soil and groundwater contamination	Removal of any construction generated waste (i.e. no local burning or disposal) Works undertaken in compliance with local and international standards with regards to waste management Training	EPC	Site observations Number of non-compliances	None
Transportation of construction materials to site	Increased air emissions and road traffic	Minimise journeys (minimise local disruption to the road network)	EPC	Site observations	None

Table D2: Construction Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
		Ensure effective journey planning			
Resource use (*i.e.* water, fuels, aggregates *etc.*)		Minimise resource use as far as is reasonably practicable (including energy) Ensure effective journey planning	EPC	Site observations	None
Site works leading to ecological disturbance	Disturbance or loss of wildlife	Training Habitat and species protection (where identified during the works) Monitoring and reporting	EPC	Site observations Number of non-compliances	None
Site works leading to noise and vibration	None identified (non-sensitive location)	Compliance with SOPs	EPC	Site observations	None
Community Health, Safety and Security		Worker-community interaction Management of construction site Traffic safety	EPC	Site observations. Audits No. of complaints	None

Table D3: Operational Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Movement of vehicles and construction machinery	Dust	Ensure adequate water supply on site for damping down dust. Regular visual monitoring of activities to identify any significant dust sources. Sheeting of loads during transport of dusty/friable material.	WTPS	Site observations. Number of complaints.	Low level dust emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Movement of vehicles.	Gaseous pollutants as a result of combustion	Exhaust emissions from vehicles should be checked as per local requirements. All plant and equipment to be maintained in accordance with appropriate legislation or manufacturers recommendations to ensure emissions to atmosphere are minimised. Engines of plant and machinery and lorries to be turned off at all times when not in use. No burning of material to take place.	WTPS	Site observations. Vehicle maintenance records. Number of complaints.	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.

Table D3: Operational Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Venting from tanks, (onshore and vessels)	Release of VOCs to the local environment	Compliance with SOPs	WTPS	Compliance with SOPs Audits and inspections	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Vessel based emissions	Gaseous pollutants as a result of combustion	Compliance with SOPs	Vessel operator WTPS	Site observations Audits and inspections	Emissions will remain even after implementation of proposed control measures. Significant impact unlikely.
Poor housekeeping within the terminal *e.g.* leaks and spills.	Release of fuels and oils to ground	Primary, secondary and tertiary containment system designed to international industry standards. Compliance with SOPs PPM systems Training, awareness and competence	WTPS	Site observations Audits and inspections	None

Table D3: Operational Phase – ESMMP Matrix

Activity/Aspect	Impacts	Mitigation and Management	Responsibility	Monitoring and KPIs	Residual Impacts
Spillage during transfer of petroleum products from marine tankers to tanks	Pollution of surface water and sediments	Facility design standards Compliance with SOPs Emergency plans, procedures and equipment	Vessel operator WTPS	Site observations Audits	None
Handling of wastewater	Pollution of surface water	Facility design standards Compliance with SOPs Emergency plans, procedures and equipment	WTPS	Audits	None
Handling and storage of waste materials	Soil and groundwater contamination	Removal of any operational wastes (i.e. no local burning or disposal) Process and procedures in compliance with local and international standards with regards to waste management	WTPS	Site observations Audits Number of non-compliances	None

Appendix E: Commitments Register

This Commitments Register (CR) sets out all the specific mitigation measures that are currently proposed to be adopted in relation to potential impacts identified in the ESIA.

The CR should be read in conjunction with the full text of the Environmental and Social Impact Assessment (ESIA).

Table E1: Commitments Register

Schedule	Primary Topic	Commitment	ESIA Section Reference
Operational	Project Description	Development of an Oil Terminal which will be operated to international industry standards.	1.2
Construction and Operational	Project Description	Publication of a range of disclosure documents including a Non-Technical Summary (NTS) which will be translated into Arabic. Inclusion of an Environmental and Social Management and Monitoring Plan (ESMMP) to focus on management activities. Focused Environmental and Social Management System (ESMS) to manage all relevant activities during both construction and operational phases.	1.3.4
Construction and Operational	Noise	Effect to reduce potential noise sources where practical.	5.2.7
Construction	Air	Development and implementation of a Construction Environmental Management Plan (CEMP) to mitigate any dust emissions.	5.3.7
Construction	Land	Asbestos sheeting and impacted areas will be further investigated and removed as part of the construction works. Construction vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local aquatic environment, thus, the risk of accidental spillage or release will be minimised. Development and implementation of a CEMP which sets out measures for the control of site drainage,	6.2.6

Table E1: Commitments Register

Schedule	Primary Topic	Commitment	ESIA Section Reference
		reducing the risk of accidental spillages and the storage and handling of materials. No underground storage tanks will be used during the construction phase. Any liquids such as degreasers, oils, diesel, required as part of the construction works will be stored in above ground tanks and located on designated areas of hardstanding.	
Operational	Land	The proposed Terminal will utilise industry standard equipment, thereby, reducing the potential risk of contamination, particularly when compared to the existing facilities. Furthermore, once operational, the Terminal will operate relevant response procedures which, if needed, will react to reduce the impact of any contamination	6.2.6
Construction	Land	Plant machinery will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local aquatic environment, thus, the risk of accidental spillage or release will be minimised. All mitigation measures will be incorporated into a CEMP, which sets out measures for the control of site drainage, reducing the risk of accidental spillages and the storage and handling of materials. Any liquids required as part of the construction works will be stored in above ground tanks and located on designated areas of hardstanding.	6.3.5
Operational	Land	The proposed Terminal will utilise modern industry standard equipment, thereby, reducing the potential risk of contamination, particularly when compared to the existing facilities. Furthermore, once operational, the Terminal will operate relevant response procedures which, if needed, will react to reduce the impact of any contamination.	6.3.5
Construction	Water Quality	**Control of Surface Water Drainage**	7.7

Table E1: Commitments Register			
Schedule	**Primary Topic**	**Commitment**	**ESIA Section Reference**
		The operation of construction vehicles and general construction activities give rise to the potential for surface runoff to become contaminated with hydrocarbons, silt or other construction materials. These and other pollution risks will be mitigated by the use of a CEMP which will require specific pollution prevention and environmental protection techniques to be employed.	
Construction	Water Quality	**Potential Groundwater Interruption** Dewatering of excavations may be required During construction. Waters generated in this manner will be controlled, treated and discharged appropriately.	7.7
Construction	Water Quality	**Piling Impacts** A detailed Method Statement will be then agreed setting out the piling technique and protection methods that will be employed	7.7
Construction	Water Quality	Detailed Flood Risk Assessment to be undertaken	7.9
Operational	Water Quality	**Control of Ground and Surface Waters by Routine Drainage** The principal source of contamination from routine operation of the site is hydrocarbon contamination from the transfer and storage of petroleum products. As such, the management and housekeeping protocols must meet industry standards.	7.7
Operational	Water Quality	**Increased Water Consumption** Water demand will be reduced as far as practical, by the incorporation of appropriate water saving devices, wherever practicable.	7.7
Operational	Water Quality	**Wastewater Generation** Given the absence of access to a foul sewer, it will be necessary for Terminal to either discharge to a bespoke sewage treatment plant (package plant) that will treat the sanitary waste to a sufficient standard to allow discharge of the treated wastewater to a watercourse	7.7

Table E1: Commitments Register

Schedule	Primary Topic	Commitment	ESIA Section Reference
		or to collect and store sewage to facilitate transport to an offsite treatment facility.	
Construction	Ecology	Clearing activities restricted to the construction corridor only	8.7.1
Construction	Ecology	Minimisation of construction working area and activities, especially in the intertidal zone	8.7.1
Construction	Ecology	Fencing of the construction area and no activities inclusive of driving or walking outside of the area to take place	8.7.1
Construction	Ecology	Compilation of a CEMP to set out pollution prevention and environmental protection measures associated with the construction activities	8.7.1
Construction and Operational	Ecology	Landscaping to comprise of native species and no irrigated vegetation	8.7.1
Construction and Operational	Ecology	A strict no approach policy to wildlife	8.7.1
Construction and Operational	Ecology	Management of feral dog populations in accordance with suitable animal control procedures	8.7.1
Operational	Hazard Analysis and Risk Assessment	Site security. Trained and experienced operatives. Design out potential problems where practical before constructing and operating the facility. Operate high quality well maintained equipment under formal audited management programmes and standard operating procedures using trained competent personnel. Provide alarms, monitoring and emergency response teams and equipment to respond rapidly and comprehensively to any incident. Development and implementation of an Oil Spill Emergency Response Plan.	10.2

Appendix F: Chapter 5 Technical Reports

Appendix F1: Baseline Noise Measurements

AN01

SAMPLETIME	LASMAX	LAFMAX	LAIMAX	LCPEAK	LAEQ	LAIEQ	LAF10	LAF50	LAF90	LAF95	LAFVAR
29/08/2014 10:14	40.3	43	45.2	82.1	35.6	39.6	39.5	33.5	30	29.5	29
29/08/2014 10:15	42.1	45.8	47.2	80.2	36.3	40.6	40	34	31	30	29.5
29/08/2014 10:16	39.7	44.5	46.9	80.1	35.9	40.1	39	34.5	30	29.5	29
29/08/2014 10:17	40.5	43.5	45.6	77.8	35.1	39.2	38.5	33.5	30	29.5	28.5
29/08/2014 10:18	40.7	45.4	47.3	79.4	36	40.3	39.5	34	30	29.5	29
29/08/2014 10:19	42	46.1	48	82.9	34.9	40.2	38	33	30	29	28
29/08/2014 10:20	39.1	43.8	45.3	83.7	34.1	38.1	37.5	32.5	30	29.5	28.5
29/08/2014 10:21	40.9	44	45.3	78.9	35.9	39.7	39.5	34.5	30	29.5	29
29/08/2014 10:22	38.6	43.4	44.7	78.4	34.1	38.5	37	32.5	29.5	29	28.5
29/08/2014 10:23	43.8	46.8	49	81.5	37.6	41.7	41	35	32	31	30
29/08/2014 10:24	44	46.8	48.3	81.1	36.6	40.7	40	34.5	32	31.5	30.5
29/08/2014 10:25	38.6	42.3	44.1	80.2	33.9	38.3	36.5	32.5	30	29.5	29
29/08/2014 10:26	42.5	46.4	48	85.1	36.5	40.8	40	34.5	31.5	30.5	29.5
29/08/2014 10:27	40	43.5	45.1	83.1	35.1	39.6	38.5	33.5	31	30	28.5
29/08/2014 10:28	40.2	44.9	46.5	83.4	36.1	40.4	39	34.5	31	30	29
29/08/2014 10:29	46.4	48.6	50.6	83.4	40.3	44.1	43.5	39	33.5	31.5	29.5
29/08/2014 10:30	44.1	46.7	49.7	87.8	38.4	42.5	41.5	36.5	32.5	31	29
29/08/2014 10:31	41.8	46.6	49.1	81.3	37.1	41.7	40.5	35.5	31	30.5	29
29/08/2014 10:32	43.9	46.6	47.9	84.5	39.4	43.2	42.5	38	34.5	33.5	32.5
29/08/2014 10:33	45.8	48.8	51.3	85.4	41.2	45	44	40	35	33.5	32.5
29/08/2014 10:34	44.5	47.2	49.9	82.7	39.4	43.1	43	38	33	31.5	30
29/08/2014 10:35	45.1	48.7	50.9	86.5	40.6	44.4	44	39.5	34	32.5	31
29/08/2014 10:36	45.1	47.3	49.8	82.9	41.1	44.5	44	40.5	35	34	32
29/08/2014 10:37	46.5	49.2	51.9	84.3	41.2	45.2	45	39.5	33.5	32.5	31
29/08/2014 10:38	46.2	50.7	52.6	83.7	40.4	44.3	44	38.5	34	33	31
29/08/2014 10:39	45.3	50.1	52.2	87.9	41.9	45.3	44.5	41	36.5	35	32
29/08/2014 10:40	47.7	50.6	52.3	85.5	41.9	45.7	45.5	40	36	34.5	33
29/08/2014 10:41	46.5	49.4	50.7	84.9	41.1	44.7	45	39	34	33	30.5
29/08/2014 10:42	46.3	49.5	52.5	87.8	41.4	45.5	45	39.5	35.5	34.5	32
29/08/2014 10:43	48.5	51.7	53.9	85.7	43.9	47.1	47	43	37.5	35.5	33
29/08/2014 10:44	68.2	76.7	81.4	104.5	54.7	66.5	54.5	51	48	47.5	47
29/08/2014 12:59	72.8	78.6	80.9	98.6	56.5	65.2	51.5	48	45.5	45	43.5
29/08/2014 13:00	50.6	54.9	57	92.6	46.9	49.3	49	46.5	43.5	42.5	40.5
29/08/2014 13:01	50.5	52.6	54.2	90	47.8	49.6	49.5	47.5	45	44.5	43
29/08/2014 13:02	48.9	51	52.4	89.5	45.7	48.1	48.5	45.5	40.5	38.5	35
29/08/2014 13:03	48.4	49.6	50.6	87.5	44.4	46.7	47.5	44	38.5	36	32
29/08/2014 13:04	48.7	50.6	52.1	92.7	44.9	47.6	48	44	39.5	37	32.5
29/08/2014 13:05	48.5	51.2	53.5	89.5	45.6	47.9	48.5	45.5	40	38.5	36
29/08/2014 13:06	47.7	49.7	52	89.1	44.7	47.2	47.5	44.5	39.5	37	34.5
29/08/2014 13:07	48.1	49.9	51.9	87.1	44.2	46.5	47	43.5	39	38	36
29/08/2014 13:08	47.9	49.7	51.3	87.6	44.5	46.9	47	44	38	36.5	33.5
29/08/2014 13:09	48.2	51.4	53.1	87	45.3	47.7	48	45	41	39.5	35.5
29/08/2014 13:10	48.8	50.4	51.5	87.3	45.4	47.5	48	45	41	39.5	36.5
29/08/2014 13:11	49.6	50.9	52.6	88	45.7	48.1	48.5	45	41	40	38
29/08/2014 13:12	48.4	50.7	52.4	89.1	45.9	48.2	48	45.5	42	41	38.5
29/08/2014 13:13	47.8	49.5	51.1	86.7	44.3	46.7	47	44	39	38	36
29/08/2014 13:14	47.6	50.5	52.7	90.7	43.8	46.4	46.5	43	39	37.5	35
29/08/2014 13:15	47.2	50.1	51.9	92.1	44.3	46.9	47	44	39.5	38	35
29/08/2014 13:16	47.9	49.4	50.7	89.4	43.9	46.6	46.5	43.5	39	38	35.5
29/08/2014 13:17	52.7	53.7	55.5	89.3	48.3	49.9	51	47.5	44.5	43.5	41.5
29/08/2014 13:18	47.9	49.7	51.2	85.2	44.1	46.5	47.5	43	39	37.5	36
29/08/2014 13:19	46.8	49.1	50.6	84.5	42.4	45.3	46	41	35.5	34	32
29/08/2014 13:20	48.6	50.7	52.4	88.9	45.8	48.2	48	45.5	42	41	39
29/08/2014 13:21	48.5	50.6	52	87.7	45.4	47.8	48	45	39.5	38.5	36.5
29/08/2014 13:22	47.8	49.8	51.7	88.9	44.8	47.2	47.5	44.5	39.5	38	35.5
29/08/2014 13:23	48.2	49.9	52.2	87.2	45.3	47.6	48	45	40	39	37.5
29/08/2014 13:24	47.9	49.6	51.3	87.3	44.3	46.7	47	44	38.5	37	34
29/08/2014 13:25	47.1	49.5	50.9	86	43.7	46.1	46.5	43.5	37.5	35.5	33.5
29/08/2014 13:26	45.3	48	49.8	85.4	41.3	44.4	44.5	40.5	35.5	33.5	31.5
29/08/2014 13:27	45.4	47.6	49.1	82.3	40.8	43.7	44	40	33	31	29.5
29/08/2014 13:28	50.7	52.6	53.2	83.4	46.3	48	49	45.5	41	40	37.5
29/08/2014 13:29	55.9	60.9	63.7	87.5	49.8	53.1	51.5	48.5	47.5	47.5	47
29/08/2014 16:40	41.5	45.4	47.7	85.4	35.5	40	38.5	34	31.5	31	31
29/08/2014 16:41	42.2	45.2	45.7	84.7	35.3	38.9	38	33.5	31.5	31	30.5
29/08/2014 16:42	39.7	44	45.8	81.9	35.2	39.5	38	34	31.5	31.5	31
29/08/2014 16:43	46.1	53.7	58.7	79.8	37.9	47.3	40	35	32	31.5	31
29/08/2014 16:44	42.8	50.8	55.8	84.1	36.6	43.5	39	35	33	32.5	32
29/08/2014 16:45	42.8	45.7	47.3	84.1	37.5	41.5	40.5	36	33	32.5	31.5
29/08/2014 16:46	42.1	44.4	45.8	83.2	37	40.8	40	35.5	32.5	32	31
29/08/2014 16:47	40.8	43.9	46	85.1	37	41.2	40.5	35.5	33	32.5	32
29/08/2014 16:48	42.3	46.8	48.6	87	37.2	41.7	40.5	36	32.5	32	31.5
29/08/2014 16:49	39.9	43.2	45.4	81.6	36.5	40.4	39.5	35.5	33	32.5	32
29/08/2014 16:50	41.3	44.3	46.4	82.7	37.7	41.5	40.5	36.5	34	33	32
29/08/2014 16:51	41.7	45.1	46.3	81.9	37.4	41.6	40.5	36	34	33.5	33
29/08/2014 16:52	40.4	43.9	46.2	83	35.8	40	38.5	34.5	32.5	32	31.5
29/08/2014 16:53	40.4	44.3	45.6	81.9	36.3	39.6	38.5	35.5	33.5	33.5	33
29/08/2014 16:54	41.8	45.5	47.7	82.6	37.7	41.3	41	36	34	33.5	33.5
29/08/2014 16:55	41.8	45.3	46.4	84.1	36.6	40.5	39.5	35.5	33	33	32.5
29/08/2014 16:56	41.9	46.2	48.5	81.8	36.9	40.6	39.5	36	33	32.5	32
29/08/2014 16:57	41.9	45.6	48.5	84	38.1	41.8	41.5	36.5	33	32.5	31.5
29/08/2014 16:58	43.4	46.8	47.9	84.9	38.4	41.9	41.5	37	34	33	32
29/08/2014 16:59	41.6	44.7	46.7	82.3	37.7	41.5	40.5	36.5	33.5	33.5	33
29/08/2014 17:00	41.2	44.6	46.3	84	37.1	40.9	40	36	33.5	32.5	32
29/08/2014 17:01	41.6	44.1	47.2	84.2	36.7	40.6	39.5	35.5	33	33	32
29/08/2014 17:02	41	44.3	46.1	84.6	36.9	40.9	39.5	35.5	34	33.5	33
29/08/2014 17:03	40.2	43.5	45.4	80.9	36.9	40.3	39	36	34.5	34	33.5
29/08/2014 17:04	40.9	44	45.2	80.9	37.9	41.1	40	37	35.5	35.5	35
29/08/2014 17:05	41.5	44	46.3	80.9	38.3	40.9	40.5	37.5	36	36	35.5
29/08/2014 17:06	40.2	43.7	45.2	80.9	36.1	39.5	38	35.5	34	33.5	33
29/08/2014 17:07	40.3	43.7	45.4	83.7	36.6	39.7	38.5	36	33.5	33.5	33
29/08/2014 17:08	41.3	44.9	46.3	82.1	37.4	40.4	39	36.5	35.5	35	34.5
29/08/2014 17:09	52.5	57.1	61.5	82.3	46.2	48.8	49	44	38.5	38	37.5
29/08/2014 17:10	56.3	60.5	63.1	88.4	52.8	57	56.5	48.5	48	48	47.5
30/08/2014 12:03	53.2	54.6	56.9	88.5	48.6	50.2	52	45.5	38	36	34
30/08/2014 12:04	43.5	47.3	49.8	87.3	38.9	43.2	42	37.5	32.5	32	31.5
30/08/2014 12:05	46.2	48.5	50	89.5	41.3	44.6	44.5	40	35.5	34	32.5
30/08/2014 12:06	47.1	51.1	53.8	88.9	41.2	45.2	44	40	35	33.5	32.5
30/08/2014 12:07	47.3	50.8	53.5	92.4	42	45.4	45	41	36.5	34	32.5
30/08/2014 12:08	47.2	50.6	53.3	87	41.4	45.2	44.5	40	35	34	32.5
30/08/2014 12:09	43.6	47.3	49.5	90.2	39.4	43.3	43	38	32.5	32	31
30/08/2014 12:10	41.1	46.8	50.1	84.6	36.5	41.3	39.5	35	32	31.5	30.5
30/08/2014 12:11	43.4	46.6	48.7	85.2	38.6	42.4	41.5	37.5	34.5	33.5	33
30/08/2014 12:12	40.4	43.4	45.6	80.9	35.2	38.9	38.5	33.5	29.5	29	28
30/08/2014 12:13	42.3	46.1	48.5	86.1	37.6	42	41	36	32	31.5	30.5
30/08/2014 12:14	44.6	47.6	50.5	86.6	40	44	44	38.5	32.5	32	30
30/08/2014 12:15	43.6	47.1	49.5	85.2	39.2	43.2	42.5	37.5	33	32	31
30/08/2014 12:16	47	50.3	53.2	88	41.5	45.5	44	40.5	36.5	36	33
30/08/2014 12:17	47.3	50.2	53.7	90.1	40.8	44.6	44	39	32.5	31.5	30.5
30/08/2014 12:18	46	49.8	53	91.8	42.2	45.7	45	41.5	37	35.5	33.5
30/08/2014 12:19	46.4	49.6	51.8	92.4	41.4	45.1	44.5	40	34	33	32
30/08/2014 12:20	45	47.9	50.2	87.8	40.3	44.1	43	39.5	33.5	32.5	30.5
30/08/2014 12:21	43.8	46.4	48.6	87.9	39	42.7	42	38	33.5	32.5	31.5
30/08/2014 12:22	45.8	48	50.6	87.6	40.8	44.2	44.5	39.5	34	33	32.5
30/08/2014 12:23	45.3	47.8	49.6	87.7	39.6	43.6	43	38	33	32	31.5
30/08/2014 12:24	45.5	47.8	49.7	88.7	38.5	42.7	42	36	32.5	32	31
30/08/2014 12:25	47.3	49.6	50.6	87.9	40.6	43.9	44.5	38	33.5	32.5	32
30/08/2014 12:26	44.4	47.2	49.8	88	40.2	43.7	43	39.5	35	34	32.5
30/08/2014 12:27	42.1	46.4	49.1	85.1	37.9	42.1	41	36.5	32	31.5	30.5
30/08/2014 12:28	41.9	44.7	47.2	85.8	35.7	40.2	39.5	33	30	29.5	29
30/08/2014 12:29	42.2	46.2	48.3	84.1	36.9	41.1	40	35.5	32	31.5	30.5
30/08/2014 12:30	43.1	47.3	50.6	86.2	39.1	43.2	42.5	38	33.5	32	31
30/08/2014 12:31	43.5	47.7	49.9	86	37.5	41.6	40.5	36	32.5	32	30.5
30/08/2014 12:32	40.2	43.5	45.3	86	36.3	39.6	39	35	32.5	32	31
30/08/2014 12:33	50.3	57.8	61.6	88	42.9	49.6	45	41	38.5	37.5	36.5

AN02

SAMPLETIME	LASMAX	LAFMAX	LAIMAX	LCPEAK	LAEQ	LAIEQ	LAF10	LAF50	LAF90	LAF95	LAFVAR
29/08/2014 10:55	53.5	55.1	56.6	81.8	49.7	51.8	53	48.5	45	44	42.5
29/08/2014 10:56	53.4	55.2	55.9	80.7	49	50.9	52.5	48	44	43	40.5
29/08/2014 10:57	54	55.7	56.2	80.2	48.9	50.7	51.5	48	45	44.5	43.5
29/08/2014 10:58	51.1	53.4	54.6	83.7	48	50	50.5	47.5	45	44.5	44
29/08/2014 10:59	51.4	54	54.7	79.3	47.5	49.7	50	47	43.5	43	41.5
29/08/2014 11:00	53.5	55.6	56.5	80.4	47.4	49.5	50.5	45.5	43	42	41
29/08/2014 11:01	48.4	50.9	52.2	77.9	42.5	44.8	45	41.5	38.5	38	37
29/08/2014 11:02	51.8	53.7	55.1	78.9	46.5	48.8	50	44.5	40.5	39	37
29/08/2014 11:03	51.2	53.1	54.9	78.9	47.2	49.8	50.5	46	42	41	40
29/08/2014 11:04	52.1	54.1	55.8	79.4	47.6	50.1	51	46.5	42	41	39
29/08/2014 11:05	49.1	52.2	53.6	80.2	45.1	47.8	48	44	41.5	41	39.5
29/08/2014 11:06	53.1	55.6	56.5	82.5	48.6	50.9	51	47.5	44.5	44	43
29/08/2014 11:07	50	51.4	52.8	79.4	44.5	46.7	47	43.5	40.5	39.5	37.5
29/08/2014 11:08	51.7	54.3	55.2	76.6	46.7	49.2	49.5	45.5	42.5	41.5	40
29/08/2014 11:09	48.8	51.1	52.6	81.5	44.5	47.3	47.5	43.5	40.5	40	38.5
29/08/2014 11:10	52.3	54.7	56.2	86.2	46.9	49.6	50	45.5	41.5	40.5	39.5
29/08/2014 11:11	52.5	54.2	56.1	80.6	48	50.3	51	46.5	42	41	40
29/08/2014 11:12	53.1	54.8	56	83.1	49.3	51.6	52.5	48	42.5	41	38.5
29/08/2014 11:13	53.4	56	56.6	82.7	49.7	52	53	49	43.5	42	40.5
29/08/2014 11:14	54.7	56.2	57	80.4	49.8	51.9	53.5	47.5	43	42	41
29/08/2014 11:15	54.9	56.7	59.4	83.2	51.5	53.6	54	51	46.5	45	43
29/08/2014 11:16	54.1	56.1	56.8	86.2	51.3	53.4	53.5	51	47	46	43.5
29/08/2014 11:17	54.9	56.3	57.9	84	51.9	53.9	54.5	51.5	47.5	47	45.5
29/08/2014 11:18	53.9	55.5	56.8	87.1	50.2	52.2	53.5	49	44.5	43.5	41
29/08/2014 11:19	54.3	55.8	56.6	82.9	50.4	52.5	53	49.5	46.5	45.5	44.5
29/08/2014 11:20	56.1	57	57.8	83.4	53	54.7	55.5	53	47	46	43.5
29/08/2014 11:21	55.7	57.1	57.9	86.7	51.6	53.5	55	50.5	44.5	43	41
29/08/2014 11:22	52.2	54.8	56.3	82	49	51.4	51.5	48.5	45	44	42
29/08/2014 11:23	55.5	57	57.9	83.3	51.8	53.7	55	51	45.5	44	43
29/08/2014 11:24	55.5	56.7	57.4	85.4	51.4	53.5	54	50.5	46.5	45.5	44
29/08/2014 11:25	55.2	56.8	57.5	85.1	50.8	52.9	53.5	50.5	46	44.5	42.5
29/08/2014 13:40	49	50.9	52.3	88.2	46.4	48.8	48.5	46	42.5	41.5	40.5
29/08/2014 13:41	49.1	51.7	53.8	85.8	45.7	48.1	48	45.5	42	41	40
29/08/2014 13:42	49.2	51.9	52.8	83.2	44.3	46.7	47.5	43	39	38	37
29/08/2014 13:43	49.1	51	52.8	86.2	45.7	48.2	48.5	45	41	40.5	39
29/08/2014 13:44	49.3	51.2	53.2	87.4	47.1	49.2	49	47	44	43.5	42
29/08/2014 13:45	50.3	51.9	53.5	89.9	47.7	49.8	49.5	47.5	44	43	39.5
29/08/2014 13:46	49.8	51.8	53.4	86.9	47.2	49.4	49.5	47	43	41	38.5
29/08/2014 13:47	60.3	61.1	61.6	92.6	52	53	56.5	48.5	44.5	43	42
29/08/2014 13:48	50.8	52.8	54.6	88	47.4	49.5	49.5	47	43.5	41	38.5
29/08/2014 13:49	50	52.4	53.7	86.7	46.6	48.8	49	46	43.5	42	40.5
29/08/2014 13:50	48.9	52.4	54.3	83.4	46.6	48.7	48.5	46.5	43.5	42.5	41
29/08/2014 13:51	48.3	50.5	51.8	86	45.8	48.2	48	45.5	42	41	39
29/08/2014 13:52	48.6	50.4	52.3	86.6	46.5	48.5	48.5	46.5	43.5	43	41.5
29/08/2014 13:53	48	50.5	52.7	90.7	45.9	48.2	48	46	42	41	39
29/08/2014 13:54	49.4	51.9	54	83.5	45.7	48.3	48.5	45	42	41	40
29/08/2014 13:55	48.6	51.3	53	84.5	46.3	48.5	48	46	43	42	40.5
29/08/2014 13:56	50.8	53.4	54.7	87.3	47.4	49.7	49.5	47	44.5	43	41
29/08/2014 13:57	50.3	51.8	53.3	88	47.6	49.6	49.5	47.5	45	44	42.5
29/08/2014 13:58	49.8	51.6	53.8	86.4	47.3	49.5	49.5	47	43.5	42.5	41
29/08/2014 13:59	49.6	51.3	52.6	88.9	47.4	49.3	49.5	47.5	44	42.5	41.5
29/08/2014 14:00	49.4	51.6	53.8	86.6	46.9	49.2	49	46.5	42.5	41.5	40.5
29/08/2014 14:01	50.8	53	54.4	87	47.3	49.3	49.5	47	43.5	43	42
29/08/2014 14:02	49.9	51.7	53.2	86.5	46.7	48.8	49.5	46	43	42	41.5
29/08/2014 14:03	49.6	53.1	54.6	85.8	47.2	49.5	49	47	44	43	41.5
29/08/2014 14:04	49.6	52.2	54.1	89	47.3	49.1	49	47.5	44	43.5	42.5
29/08/2014 14:05	49.3	51.1	53.3	87.6	47.1	49	49.5	47	44	43	42.5
29/08/2014 14:06	49	51	53	85.4	46.3	48.4	48.5	46	43.5	42.5	40
29/08/2014 14:07	49.3	50.9	52.1	85.1	47	48.8	49	47	44	42.5	40.5
29/08/2014 14:08	49.4	51.6	53.6	87.1	46.7	49	48.5	46.5	43	42	40
29/08/2014 14:09	48.2	49.8	51.3	83.7	45.1	47.3	47.5	45	40	39	37.5
29/08/2014 14:10	49.2	50.9	52.3	84.9	46	48.2	48.5	45.5	42	41	40
29/08/2014 14:11	49.4	51	53.1	85.4	46.8	48.8	49	46.5	44	43	41.5
29/08/2014 14:12	50	52.4	54.3	90.2	46.6	48.8	49	46.5	41.5	40.5	38.5
29/08/2014 14:13	49.2	51.2	53.2	87.8	46.7	48.8	48.5	46.5	43	42	40.5
29/08/2014 14:14	49.4	51.6	53.2	86.6	47	49.1	49	47	44	43.5	41.5
29/08/2014 14:15	49.2	52	53.4	86.2	45.9	48.3	48	45.5	41.5	40.5	39.5
29/08/2014 14:16	49	50.7	51.9	87.8	46.4	48.4	48.5	46.5	42.5	41.5	39.5
29/08/2014 14:17	49.8	51.3	52.3	87.7	47.1	49.2	49	47	44.5	43.5	41.5
29/08/2014 14:18	47.1	49.3	51.6	83.4	43.8	45.9	46.5	43	39	38	37
29/08/2014 14:19	48.3	50.7	52.6	84.7	45.4	47.6	48	45	41	40.5	39.5
29/08/2014 14:20	47.7	49.5	51	86.3	46	48	48	46	43.5	42.5	41.5
29/08/2014 14:21	48.4	49.9	51.8	87.3	45.8	48	48	45.5	42.5	41.5	39.5
29/08/2014 14:22	46.5	48.6	50.8	85.3	43.1	45.4	46	42.5	39	38.5	38
29/08/2014 14:23	45.4	47.6	48.4	82.6	41.2	43.2	43	41	38.5	38	37.5
29/08/2014 14:24	44.5	46.6	48.5	82.9	41	43.6	43.5	40	38	37	36.5
29/08/2014 14:25	44.7	46.9	48.3	83.6	42.2	44.4	44.5	41.5	38.5	38	36
29/08/2014 14:26	44	47.1	48.6	84	41.3	43.4	43.5	40.5	38.5	38.5	38
29/08/2014 14:27	43.9	46.6	48.3	81.9	40.8	43.1	43	40	38	37.5	37
29/08/2014 14:28	44.9	46.7	47.9	80.9	40.8	43.1	43	40	38	37.5	36.5
29/08/2014 14:29	44.8	46.8	49.2	83.4	41.5	43.5	43.5	41	38.5	38	37
29/08/2014 14:30	47.8	49.9	52.3	82.9	42.9	45.4	45.5	42	39	38	37.5
29/08/2014 14:31	47.5	47.8	49.5	81.6	41.9	44.5	44	41.5	39.5	38.5	37.5
29/08/2014 14:32	44.3	46.3	48.3	83	41.3	43.7	43.5	41	38.5	38	37
29/08/2014 14:33	44.3	47	48.4	79.4	40.7	43	43	40	37.5	37	36
29/08/2014 14:34	42.3	44.2	46.6	78.7	38.8	40.9	41	38	36	36	35.5
29/08/2014 14:35	43.5	46.7	49.3	78.9	40.1	42.4	42.5	39.5	37	36	35
29/08/2014 14:36	41.7	44.4	45.8	79.5	39.4	41.1	41	39	37.5	37	36.5
29/08/2014 14:37	44.7	47.9	49	82.9	42	44	44	41.5	39.5	38.5	37.5
29/08/2014 14:38	43.7	46	47.9	83.6	40.1	42.1	42.5	39.5	35.5	35	34.5
29/08/2014 14:39	44.2	46	47.5	80.6	40.7	42.9	43.5	40	37	36.5	36
29/08/2014 14:40	44.7	46.6	47.8	81.3	41.5	43.8	43.5	41	38.5	38	36.5
29/08/2014 14:41	45.2	47	48.7	81.3	42.4	44.7	44.5	42	39.5	38.5	37.5
29/08/2014 14:42	47.2	49.5	51.3	81.6	42.7	44.9	45.5	41.5	38.5	37.5	35.5
29/08/2014 14:43	46.8	51	52.9	81.6	43	45.6	46	42	39	38	36.5
29/08/2014 14:44	47	49.2	50.5	83.4	43.3	45.7	46	42.5	39.5	38.5	36.5
29/08/2014 14:45	48.1	51.3	52.8	81.6	43.4	45.8	46	42.5	39.5	39	38
29/08/2014 14:46	47.4	49.8	51	82.3	43.5	46	46	43	39	38	35.5
29/08/2014 14:47	46.6	49.7	52	80.9	41.8	44.3	45	40.5	37	36.5	35.5
29/08/2014 14:48	48.5	51.1	52.6	82	45.1	47.1	47.5	44.5	41.5	40.5	38
29/08/2014 14:49	47.8	49.8	50.8	85.4	45.7	47.8	47.5	45.5	42.5	42	40.5
29/08/2014 14:50	49	51.5	53.4	85.4	45.2	47.3	47.5	44.5	41.5	40.5	39
29/08/2014 14:51	49.9	52.5	54.4	85.7	46.2	48.5	48.5	46	41.5	40.5	39.5
29/08/2014 14:52	51.9	54.5	55.5	83.3	48	50	50	47.5	45	44	43
29/08/2014 14:53	48.8	50.8	51.9	83.7	46	47.8	48	46	43.5	42	41
29/08/2014 14:54	48.2	50.4	52.1	84.6	45.6	47.4	47.5	45	42.5	42	41
29/08/2014 14:55	46.9	49.4	50.8	84.9	43.8	46.1	46	43.5	41	40	39.5
29/08/2014 14:56	49.1	51.6	52.7	86	45.7	47.9	48.5	45	40.5	40	38.5
29/08/2014 14:57	48.4	50.2	51.7	90	44.5	47	47	44	40	39	37
29/08/2014 14:58	49.9	51.4	53.1	85.3	47.1	49	49.5	47	43	42	40.5
29/08/2014 14:59	53.9	56.2	57.5	89.2	49.4	51.5	52	48.5	46	45	43.5
29/08/2014 15:00	54.3	57.2	58.4	87.9	50.8	52.4	52.5	50.5	48	47.5	46.5
29/08/2014 15:01	52.4	55.4	56.6	86.9	49.5	51.2	51	49.5	47.5	47	46
29/08/2014 15:02	51.3	53.4	55.4	88	49.4	51.3	51	49.5	46.5	46	44.5
29/08/2014 15:03	50.7	53.4	55.9	86.3	48.3	50.4	50	48	45.5	45	43.5
29/08/2014 15:04	49.4	52	54.7	83.4	45.8	48.1	48.5	45.5	42	41	40
29/08/2014 15:05	57.3	58.1	58.7	86.2	50.1	51.3	55	47.5	44	43	42
29/08/2014 15:06	53.4	52.6	54.6	85.6	46.1	48.4	48.5	45.5	42	40.5	37.5
29/08/2014 15:07	46.9	49.2	50	81.9	43.3	45.5	46	43	39.5	38.5	37.5
29/08/2014 15:08	48.3	49.9	51.4	86.9	45.5	47.6	47.5	45.5	41.5	41	39
29/08/2014 15:09	48.3	51.2	52.6	88	45.5	47.6	47.5	45.5	41	40	38.5
29/08/2014 15:10	48.2	50.7	52.1	85.8	45.7	47.9	48	45.5	41.5	40.5	38.5

AN03

SAMPLETIME	LASMAX	LAFMAX	LAIMAX	LCPEAK	LAEQ	LAIEQ	LAF10	LAF50	LAF90	LAF95	LAFVAR
29/08/2014 08:40	55.6	61.4	65.9	81.4	47.6	55.4	52	41	36	35.5	35
29/08/2014 08:41	43.9	51.1	55.1	84.7	37.3	41.6	39	36.5	35	34.5	34
29/08/2014 08:42	37.3	39	42.3	70.4	35.6	36.9	37	35.5	34	33.5	33
29/08/2014 08:43	36.4	38.7	40.1	68.9	34.9	35.9	36	34.5	33.5	33.5	33
29/08/2014 08:44	38.4	40.3	42	69.6	35.3	36.9	37.5	34.5	33	33	32.5
29/08/2014 08:45	36.3	37.9	38.8	68.6	34.6	35.3	35.5	34.5	34	33.5	33.5
29/08/2014 08:46	37.3	40.2	42.2	69.7	35.3	36.4	36.5	35	34	33.5	33.5
29/08/2014 08:47	35.8	37.7	38.6	70.2	34.2	34.9	35	34	33.5	33.5	33
29/08/2014 08:48	38.3	40.3	41.7	70.2	34.9	36.3	36.5	34.5	33	33	32.5
29/08/2014 08:49	38.1	40.7	42.5	70.8	34.3	35.9	36.5	33.5	32.5	32.5	31.5
29/08/2014 09:21	58.1	62.4	64.2	77.9	47.1	53.2	49	40.5	38	37.5	37.5
29/08/2014 10:11	54.9	62.1	66.4	84.3	48.8	54.8	50.5	47	46	46	45.5
29/08/2014 10:12	49.6	50.2	51.2	79.4	40.3	42.7	42.5	38	33.5	32	31
29/08/2014 10:13	44.3	47.2	49.1	82.3	37.4	41.1	41	35.5	30	29	28.5
29/08/2014 10:14	40.3	43	45.2	82.1	35.6	39.6	39.5	33.5	30	29.5	29
29/08/2014 10:49	60.5	65.4	70.2	94.5	54.3	58.8	58	52	48	43	39.5
29/08/2014 10:50	49.8	51.9	53.2	79.8	45.5	48.4	49	44	40	39.5	38.5
29/08/2014 10:51	51.5	53.6	55	82.3	48.4	50.8	51	48	44.5	43.5	42
29/08/2014 10:52	53.2	55.3	56	80.2	49.3	51.5	52	48.5	44.5	44	42.5
29/08/2014 10:53	54.9	56.3	57.4	79.7	49.3	51.6	53	48	44	42.5	41.5
29/08/2014 10:54	54.6	56	57.1	84.5	50.9	52.9	53.5	50.5	46	44	42
29/08/2014 11:26	56.3	59.7	62.7	85.1	51.5	53.8	54.5	50.5	44	43	41
29/08/2014 11:27	55.8	57.1	58	82.7	54.9	56	56.5	55	53.5	53	53
29/08/2014 11:34	54.7	62.3	67	86.6	48.9	55.8	51	47.5	45.5	44	43
29/08/2014 11:35	49.4	49.2	50.6	77.1	42.3	44.3	45.5	41	39	38.5	38
29/08/2014 11:36	46	49.5	51.9	82.6	40.8	42.8	43	39.5	38.5	38	37.5
29/08/2014 11:37	50.3	52.8	54.6	84.2	46	48.7	49.5	44.5	40	39.5	38
29/08/2014 11:38	51.5	54.3	55.3	81.3	45.5	48.2	49	44	40.5	39.5	38.5
29/08/2014 12:09	58.2	60.5	61.7	89.1	54.9	56.1	57	55.5	49.5	48.5	47.5
29/08/2014 13:35	56.4	60.7	64.7	95.2	51.6	54.6	54	52	43.5	42.5	41
29/08/2014 13:36	51.4	53.9	55.7	82.5	45.3	47.9	48.5	44	39	38	37
29/08/2014 13:37	48.9	51.2	52.5	86	46.5	48.6	48.5	46.5	43.5	42.5	41
29/08/2014 13:38	48.6	50.4	52.7	85.8	46.4	48.5	48.5	46	43	42	41
29/08/2014 13:39	49.2	51.1	53	88	46.5	48.5	49	46	42.5	40	38.5
29/08/2014 15:11	54.5	59	62.2	91.4	47.8	50.9	52	45.5	41.5	41	40
29/08/2014 15:12	71.6	76.1	78.4	91.4	63.7	68	64.5	58	52.5	52	51.5
29/08/2014 15:17	60.3	67.1	70.3	90.2	53.6	60.3	55.5	52	51.5	51	50.5
29/08/2014 15:18	57.4	60.3	60.9	84.5	46.3	47.8	50.5	41	38.5	38	37.5
29/08/2014 15:19	44	44.9	46.4	78.4	41.1	42.3	43	40.5	39	39	38.5
29/08/2014 15:51	49.1	50	51.4	79.2	43.1	44.2	46.5	41.5	40	39.5	39.5
29/08/2014 15:52	62.8	67.5	69.1	93.3	55.4	58.5	56.5	54	53.5	52	49
29/08/2014 16:38	66.7	71.1	72.3	88.3	54.7	60.7	54	45.5	34.5	33	32
29/08/2014 16:39	38.7	43.1	45.1	79.4	34.5	38.5	37	33.5	31.5	31	30.5
29/08/2014 17:17	55.8	62.8	66.8	93.7	47.8	54.8	50	45	40.5	40.5	40
29/08/2014 17:18	47.4	50.6	52.4	74.9	41.4	42.9	42.5	40.5	39.5	39.5	39.5
29/08/2014 17:19	42.6	43.8	44.8	72.3	40.2	41	41	40	39.5	39	39
29/08/2014 17:51	54.9	60.4	64.2	86.2	52.4	57	53.5	52	50.5	50	50
30/08/2014 12:02	59.9	66.9	70.4	88.3	52.9	58	53.5	52	51	51	50

AN04

SAMPLETIME	LASMAX	LAFMAX	LAIMAX	LCPEAK	LAEQ	LAIEQ	LAF10	LAF50	LAF90	LAF95	LAFVAR
29/08/2014 08:50	37.4	39.7	43.4	74.2	34.4	36.1	36.5	33.5	32.5	32.5	32.5
29/08/2014 08:51	45.7	47.5	49.4	73.1	40.3	42.6	44	38	34	33.5	33
29/08/2014 08:52	50.2	53	54.7	75.2	46.3	49.3	49	45.5	42.5	42	41
29/08/2014 08:53	46.9	50.1	51.5	74	39.5	42.2	42.5	37.5	35	34.5	34
29/08/2014 08:54	38.7	41.2	42.7	70.4	35.7	37.1	37	35.5	34	34	33.5
29/08/2014 08:55	37.6	40.9	44.2	69.9	35.2	36.9	37	34.5	33	32.5	32.5
29/08/2014 08:56	48.7	51.7	52.8	74.5	44.2	46.6	47.5	43	38.5	37.5	36
29/08/2014 08:57	52	54	56	77	45.8	48.5	49.5	44	36	35	34.5
29/08/2014 08:58	38.7	41.4	43.2	71.7	35.6	37	37.5	35	33.5	33.5	33
29/08/2014 08:59	58.3	61.4	63.9	80.1	52.3	54.5	57	49.5	44	41.5	39.5
29/08/2014 09:00	57.3	59.6	61.3	79.7	52	54.1	56	50	42	41	38.5
29/08/2014 09:01	42.4	42.8	44.2	72.4	37	38.5	40	36	34	33.5	33
29/08/2014 09:02	38.4	43.3	46.4	71.1	35.9	37.2	36.5	35.5	35	35	34.5
29/08/2014 09:03	36.5	39.4	41.3	72.2	35.6	36.4	36.5	35.5	35	34.5	34.5
29/08/2014 09:04	37.8	39.7	41.1	69.6	35.5	36.8	37	35	34.5	34	34
29/08/2014 09:05	36.8	38.7	40.4	69.9	35	36	36	35	34	34	34
29/08/2014 09:06	37.8	40.7	44.4	68.5	35.1	36.9	36.5	34.5	34	34	33.5
29/08/2014 09:07	44.2	46.6	47.4	70.3	39.9	41.5	43.5	38	35	35	34.5
29/08/2014 09:08	48.2	50.4	51.6	74.2	43.6	45.6	46.5	42.5	39	38.5	37.5
29/08/2014 09:09	45	46.9	47.9	71.4	40.6	42	43.5	39	37.5	37	36.5
29/08/2014 09:10	39	41.2	42.2	70.7	37.5	38.2	38.5	37.5	36.5	36.5	36
29/08/2014 09:11	39	40.2	41.5	70.8	36.8	37.5	37.5	36.5	36	36	35.5
29/08/2014 09:12	40.1	42.1	43.1	70.8	37.6	38.6	39	37.5	36	36	36
29/08/2014 09:13	40.4	41.9	43.5	70.8	38.4	39.5	39.5	38	37.5	37	37
29/08/2014 09:14	40.4	42	43.1	71.7	38.8	39.7	39.5	38.5	38	37.5	37.5
29/08/2014 09:15	40.6	41.6	43	69.6	39.6	40.4	40.5	39.5	38.5	38.5	38
29/08/2014 09:16	47.2	48.4	49.3	72	44.4	45.5	47	44	40.5	40	39.5
29/08/2014 09:17	46.8	47.1	47.9	71.8	40.4	41.2	42	39.5	38.5	38	38
29/08/2014 09:18	45.6	51.6	55.5	74.1	43.4	44.8	44.5	43.5	41.5	41	40
29/08/2014 09:19	45	45.6	46	70.8	42	42.5	44	41.5	40.5	40	39.5
29/08/2014 09:20	46.4	47.2	48	73.3	44.2	44.9	46	44.5	40.5	40	40
29/08/2014 11:39	51.3	53.5	54.7	78.9	46.4	49	49.5	45	40.5	39	38
29/08/2014 11:40	53.4	55.5	56.6	82.6	47.5	49.9	51	46	40	39	37
29/08/2014 11:41	50.5	53.1	54.5	83	47.2	49.6	50	47	42	41	40
29/08/2014 11:42	47.6	49.9	51.7	77.4	43.1	45.5	46.5	41.5	39	38.5	38
29/08/2014 11:43	51.7	53.5	54.6	84.9	46.2	48.8	49.5	44.5	39	38.5	37.5
29/08/2014 11:44	48.6	50.6	52.9	80.5	45.3	47.8	48	45	40.5	39	38.5
29/08/2014 11:45	51	53.1	54.3	82.3	46.5	49	49	45.5	42.5	41	38.5
29/08/2014 11:46	48.9	51.9	53.9	85.4	45.4	48.2	48.5	44.5	40	39.5	38.5
29/08/2014 11:47	49	51.3	52.8	80	43.9	46.8	47	43	39	38	36.5
29/08/2014 11:48	48	50.5	51.8	78.9	43.1	45.4	46.5	42	38	37.5	36.5
29/08/2014 11:49	47	49.1	50.5	77.4	42.3	44.8	45	41.5	39	38	37.5
29/08/2014 11:50	51	52.2	53	78.9	44.9	46.1	50	41.5	38	37	36
29/08/2014 11:51	55.8	57.1	58.7	81.3	52	53.5	53.5	51.5	49.5	49	48.5
29/08/2014 11:52	58.5	61.4	62.7	83.8	53.4	55.1	55.5	52.5	49	48.5	47.5
29/08/2014 11:53	51.9	55.3	56.6	80.9	48.4	50.2	50	48	45.5	45	44.5
29/08/2014 11:54	51.6	54.4	55.7	86.2	47	49.3	49.5	46	43.5	43	42.5
29/08/2014 11:55	50.5	52.9	55.2	79.8	46.3	48.8	49.5	45	41.5	41	40.5
29/08/2014 11:56	52.7	54.5	55.6	84.5	47.3	49.7	50.5	46	42	41.5	40
29/08/2014 11:57	51.4	53.5	55	83.6	45.8	48.2	49	43.5	40	39	38
29/08/2014 11:58	52.7	54.5	56	83.4	47.1	49.7	50.5	45.5	41	39.5	38.5
29/08/2014 11:59	52.3	55.4	56.6	82	47.2	49.6	49.5	46.5	42	40.5	38.5
29/08/2014 12:00	52	54	55.8	86	47.4	50.2	51	46.5	41	39.5	37
29/08/2014 12:01	51.3	54.1	55.6	84.7	46.1	48.8	49.5	45	40	39	36
29/08/2014 12:02	50.8	53.1	54.4	86.6	47	49.5	50	46.5	38.5	37.5	36.5
29/08/2014 12:03	52.1	54.3	55.2	83.8	48.1	50.2	51.5	47	43	42	40.5
29/08/2014 12:04	51.6	53.6	54.5	83.4	47.2	50	50.5	46	41	40	39
29/08/2014 12:05	52.2	54.3	55.8	84.5	48.2	50.8	51	47.5	43	41.5	40.5
29/08/2014 12:06	51	53.6	55.1	85.8	46.8	49.4	49.5	46	40.5	38.5	37
29/08/2014 12:07	51.4	53.6	55.4	82.3	47.1	49.8	50	46.5	40.5	39.5	37
29/08/2014 12:08	54.2	56.3	57.3	84.3	50.4	52.4	53	50	46	44.5	43
29/08/2014 15:20	41.8	44	46.2	80.6	39.8	41.4	41	39.5	38	38	37.5
29/08/2014 15:21	41.2	43.9	46	77.4	39.9	41.5	41	40	38.5	38	37.5
29/08/2014 15:22	42.9	44.9	47.6	80.2	41.1	42.7	42	41	40	39.5	38.5
29/08/2014 15:23	42.2	44.4	47.5	78.4	40.4	42.2	42	40.5	38.5	38.5	38
29/08/2014 15:24	43.7	45.8	46.7	80.9	40.5	42	42.5	40	38.5	38	37
29/08/2014 15:25	42	45.2	47.9	76.6	40.3	41.8	41.5	40	39	38.5	37.5
29/08/2014 15:26	43.3	44	47.8	80	39.7	41.5	41.5	39	37.5	37.5	37
29/08/2014 15:27	41.8	42.7	46.2	76.3	39.5	40.9	40.5	39.5	38	38	37
29/08/2014 15:28	43.5	44.2	45.7	77.5	39.8	41	41.5	39.5	38	37.5	37.5
29/08/2014 15:29	43.3	44.2	45.5	77.4	40.5	41.9	42.5	40	38	37.5	37.5
29/08/2014 15:30	41.2	43.5	44.9	78.9	39.3	41	40.5	39	37.5	37.5	36.5
29/08/2014 15:31	42.5	43.9	45.5	78.4	40.5	41.7	42	40.5	38	37.5	37
29/08/2014 15:32	42	44.7	47.5	77.4	40.7	42.1	41.5	40.5	39.5	39.5	39
29/08/2014 15:33	43.1	45.4	47.4	84.3	40.6	42.3	42.5	40	38.5	38.5	38
29/08/2014 15:34	42	44.6	46.2	79.8	39.3	41.2	40.5	39	38	37.5	37
29/08/2014 15:35	40.9	43.2	46.4	77.9	39.1	40.9	40	39	38	37.5	37
29/08/2014 15:36	43.7	45	46.6	78.9	41	42.3	42.5	40.5	39.5	39	38.5
29/08/2014 15:37	43.8	48.4	49.7	77.2	39.6	41.8	41	39	38	37.5	37
29/08/2014 15:38	44.4	46.3	47.7	77.4	41.5	43	44	40.5	39	39	38
29/08/2014 15:39	46.8	49.5	51.3	77.9	42.4	44.2	44.5	41.5	40	39.5	39
29/08/2014 15:40	42.8	45	47	79.4	40.6	42.3	42	40	38.5	38	37.5
29/08/2014 15:41	40.8	42.8	45.4	77.9	39.1	40.8	40	39	38	37.5	37.5
29/08/2014 15:42	41.3	44.7	48.5	78.4	38.8	41.2	40	38.5	37	36.5	36
29/08/2014 15:43	44.8	45.5	46.5	75.6	40.2	41.8	42	39.5	38	37.5	37
29/08/2014 15:44	42.5	43.5	44.9	75.6	40.2	41.3	42	40	37.5	37	37
29/08/2014 15:45	60	65.7	67.8	79.8	44.6	52.6	41.5	39.5	36.5	36	35.5
29/08/2014 15:46	72.8	80.4	83	87	61.7	71.9	55.5	40.5	39	38.5	38
29/08/2014 15:47	42.9	43.9	45.9	76.9	40.9	41.9	42.5	40.5	39	39	38.5
29/08/2014 15:48	60.8	67.3	69.7	79.1	47.4	56.7	41.5	40	39	38.5	38
29/08/2014 15:49	57.8	64	66.3	75.6	43.6	51.2	42.5	40.5	39	39	38.5
29/08/2014 15:50	41.6	44.7	47.9	79.7	39.7	41.5	41	39.5	38.5	38	38
29/08/2014 17:20	41.7	43.6	45.1	71.7	39.8	40.4	40.5	39.5	39	39	38.5
29/08/2014 17:21	44.2	47.6	49.1	73.8	40.1	41.1	41	39.5	39	39	38.5
29/08/2014 17:22	41.3	43.1	44.3	70.5	39.7	40.3	40.5	39.5	39	38.5	38.5
29/08/2014 17:23	40.8	43.3	44.6	74.6	39.5	40.4	40.5	39.5	38.5	38	38
29/08/2014 17:24	50.3	54.7	56.6	85.3	40.2	41.7	40.5	39	38	38	37.5
29/08/2014 17:25	49.7	48.8	55.7	79.8	39.8	43.2	41	39	38	38	37.5
29/08/2014 17:26	43.2	47	48.8	74.9	39.7	41.1	41	39.5	38	38	37.5
29/08/2014 17:27	41.5	44.3	46.5	72.9	39.1	40.3	40	39	38	38	37.5
29/08/2014 17:28	41.1	43.1	45	71	39	39.8	40	39	38	38	38
29/08/2014 17:29	40.5	43.3	44.8	72.9	38.6	39.4	39.5	38.5	37.5	37.5	37
29/08/2014 17:30	40.7	43.4	46.9	71.1	38.5	39.5	39.5	38.5	37.5	37.5	37
29/08/2014 17:31	40.4	42.1	43.5	72.9	38.7	39.3	39.5	38.5	37.5	37.5	37
29/08/2014 17:32	43.2	46.5	49.3	70.6	39.1	40.6	40	38.5	37.5	37.5	37
29/08/2014 17:33	48.1	50.6	53	71.5	40.5	42.6	42	39	38	38	37.5
29/08/2014 17:34	51.8	60.1	64.8	80.3	39.9	49.2	39.5	38.5	38	38	37.5
29/08/2014 17:35	39.7	41	42.1	73.1	38.9	39.4	39.5	39	38	38	37.5
29/08/2014 17:36	40.6	43.3	45.9	78.4	39.1	39.9	40.5	39	38	38	37.5
29/08/2014 17:37	41	42.9	45	70.6	39.3	39.9	40	39	38.5	38.5	38
29/08/2014 17:38	41.2	46.5	50.6	71.4	39	40.3	40	38.5	38	38	37.5
29/08/2014 17:39	49.7	53.3	56.5	78.4	43.7	45.8	48	39.5	38.5	38.5	38
29/08/2014 17:40	51.1	52.6	54.3	76.7	48.2	49.3	50.5	48.5	42.5	42	41
29/08/2014 17:41	50.9	52.4	53.7	76.2	48.2	49.3	50	48	46	45.5	45
29/08/2014 17:42	49	49.9	50.8	74.5	47.2	48	48.5	47	45	44.5	44
29/08/2014 17:43	44.8	45.5	46	72.1	43.8	44.3	44.5	44	43	42.5	42.5
29/08/2014 17:44	45	46.7	47.7	71.9	41.8	42.3	42.5	41.5	40.5	40	40
29/08/2014 17:45	43.5	45.5	47	73.8	40.9	41.6	41.5	40.5	39.5	39.5	39
29/08/2014 17:46	43.2	44.2	45.4	73.3	41.2	42	42.5	41	40	39.5	39
29/08/2014 17:47	42.4	43.3	44.1	73	41.1	41.5	42	41	40	40	39.5
29/08/2014 17:48	42	43.4	45.1	73.6	40.9	41.4	41.5	41	40	39.5	39.5
29/08/2014 17:49	41.9	44.3	45.5	73.3	40	40.6	41	40	39	39	39
29/08/2014 17:50	52.4	53.2	54.1	78.4	44.3	45.3	48.5	40.5	38.5	38.5	38

AN05

SAMPLETIME	LASMAX	LAFMAX	LAIMAX	LCPEAK	LAEQ	LAIEQ	LAF10	LAF50	LAF90	LAF95	LAFVAR
29/08/2014 09:26	56.6	62.2	65.2	87.9	51	54.9	51	50.5	50	50	49.5
29/08/2014 09:27	50.6	52.5	55.4	75.6	46.4	47.4	50	43.5	38.5	38.5	38
29/08/2014 09:28	40.1	41.3	42.2	74.7	38.9	39.5	40	38.5	38	37.5	37.5
29/08/2014 09:29	39.4	40.3	40.8	73.8	38.2	38.8	39	38	37.5	37.5	37
29/08/2014 09:30	39.9	40.8	41.4	74.3	38.9	39.4	39.5	39	38	38	37.5
29/08/2014 09:31	42.1	43.3	44.2	72.9	39.5	40.1	40.5	39.5	38	38	37.5
29/08/2014 09:32	41.8	44.7	46.4	72.9	39.3	40	40	39	38.5	38	38
29/08/2014 09:33	40.6	41.4	41.9	73.1	39	39.6	40	39	37.5	37.5	36.5
29/08/2014 09:34	41	42.1	44.2	75.6	39	39.7	40	39	38	37.5	37.5
29/08/2014 09:35	43.6	48.1	50.5	81.6	39.6	41	41	39.5	38	37.5	37
29/08/2014 09:36	41.5	43.7	45.2	79.4	39	40.2	40	39	38	37.5	37.5
29/08/2014 09:37	39.9	41.6	43.3	78.6	38.4	39.2	39.5	38.5	37	37	36.5
29/08/2014 09:38	40.7	42.5	43.1	73.8	39.2	39.8	40	39.5	38	38	37.5
29/08/2014 09:39	39.8	42.2	43.6	76.3	38.9	39.7	39.5	39	38	38	37.5
29/08/2014 09:40	40.6	41.2	41.9	71.5	39.2	39.8	40	39	38.5	38	37.5
29/08/2014 09:41	42.1	43.4	44.4	75.9	40.3	40.8	41.5	40	39	39	38.5
29/08/2014 09:42	41.7	43.8	45.3	75.3	39.7	40.4	40.5	39.5	38.5	38	38
29/08/2014 09:43	43.9	45	45.4	75.3	39.6	40.2	40.5	39	38.5	38	37.5
29/08/2014 09:44	58.7	61.4	63	82.8	49.4	51.3	54.5	41	39	38.5	38.5
29/08/2014 09:45	42.3	46.8	49.5	74.2	39.3	40.5	40	39	38	38	37.5
29/08/2014 09:46	42.8	46.2	47.9	75.6	40.1	41.4	41.5	39.5	38	38	37.5
29/08/2014 09:47	41.2	43.5	45.2	76.6	39.4	40.2	40.5	39.5	38	38	37.5
29/08/2014 09:48	41.3	44.1	45.7	75.6	39.7	40.5	40.5	39.5	39	38.5	38.5
29/08/2014 09:49	42.2	43.5	45	73.5	41.1	41.8	42	41	40	40	39.5
29/08/2014 09:50	42.3	43	43.8	72.6	41	41.6	42	41	40	40	39.5
29/08/2014 09:51	41.8	42.5	43.1	72.6	40.3	40.9	41.5	40.5	39	39	38.5
29/08/2014 09:52	41.6	44.2	44.8	73.3	39.5	40.3	40.5	39.5	38.5	38	38
29/08/2014 09:53	42.6	44.6	46.2	74.5	40.5	41.5	41.5	40.5	39.5	39	38.5
29/08/2014 09:54	41.5	44.3	47	72.6	39.6	40.7	40.5	39.5	38.5	38	38
29/08/2014 09:55	44.8	46.5	47.9	75.6	40.7	42.2	42	40.5	39	39	38.5
29/08/2014 09:56	63.2	68.9	71.9	80.8	51.3	60.1	53	40.5	39	39	38.5
29/08/2014 09:57	55.7	61.4	65.4	87	49.2	53.9	51.5	47.5	39.5	39	38
29/08/2014 12:13	60.9	63.1	63.7	92.2	55.3	57.1	58	54.5	53	52	45
29/08/2014 12:14	50.5	54.6	55.9	88.8	44.8	48.6	48	43.5	39	38.5	37.5
29/08/2014 12:15	49.6	53.6	55.8	86.3	45.8	49.2	49	44.5	40.5	39.5	38
29/08/2014 12:16	52.1	55.3	58	96.3	47.6	51.3	51.5	46	40.5	39.5	37
29/08/2014 12:17	50.8	53.6	55.4	89.3	45.8	49.4	49	44.5	40	39	37.5
29/08/2014 12:18	52.9	55.1	56.4	85.6	46.3	49.5	49.5	44.5	39	38	37.5
29/08/2014 12:19	51.6	53.6	55.3	88.3	46	48.4	50	42.5	39	38	37.5
29/08/2014 12:20	51.8	54.7	56	91.2	44.1	47.1	47.5	41	38.5	38	37.5
29/08/2014 12:21	53.4	55.8	57.4	88.9	46.2	49.4	51	41.5	38	38	37.5
29/08/2014 12:22	60.6	64.3	67.9	88	52.9	55.8	59	48.5	42	41	39
29/08/2014 12:23	52	55.7	56.8	91.4	46.9	49.8	51	44	40	39	37.5
29/08/2014 12:24	51.8	54.9	55.7	87.6	46	49.2	50	43.5	39.5	38.5	37.5
29/08/2014 12:25	53.3	56.1	57.1	92.1	48.9	51.8	52.5	47	40.5	40	39
29/08/2014 12:26	52.6	55.1	56.9	93.5	46.7	49.8	51	44	40	39.5	38.5
29/08/2014 12:27	51.9	54.3	56.2	88.6	46.2	49.2	50	44	40.5	39.5	39
29/08/2014 12:28	52.5	55.2	56.8	90.5	46.2	49.4	49.5	44	41.5	41	40.5
29/08/2014 12:29	52.7	54.6	56.3	89.9	47.4	50.1	51.5	45.5	41	40.5	40
29/08/2014 12:30	51.3	53.9	55.4	90.5	47	48.9	50	46	42.5	42.5	42
29/08/2014 12:31	55.1	57	57.7	93	51.2	53	54	50	48	47	45.5
29/08/2014 12:32	54.3	55.9	56.5	89.3	48.8	50.7	51.5	48	45	44.5	44
29/08/2014 12:33	53.2	57.4	59.2	94.3	47.1	49.5	49	46	44.5	44	43
29/08/2014 12:34	55.1	58.1	59.8	90.8	47.5	51.1	52	44	41	41	40.5
29/08/2014 12:35	53.5	57.4	60.3	93.3	48.1	51.4	52	46	40.5	39.5	38.5
29/08/2014 12:36	52.4	54.6	55.6	90.2	45.3	48.5	48.5	43.5	40	39.5	38.5
29/08/2014 12:37	51.4	53.9	55.7	90.6	45.3	48.5	49	42.5	39.5	38.5	38.5
29/08/2014 12:38	52	55	56.2	93.2	46.6	49.8	50	44.5	40.5	39.5	38.5
29/08/2014 12:39	53.8	60.6	65.6	91.2	47.5	53	51.5	45	39.5	38.5	37.5
29/08/2014 12:40	50	53.4	55.3	89.8	44.3	47.6	48	42.5	39	39	38.5
29/08/2014 12:41	53.3	55.9	57.4	90	47.6	51	51	46	39.5	38.5	37.5
29/08/2014 12:42	51.8	54.4	55.8	90.8	46.9	50	50.5	45	40	39.5	38
29/08/2014 12:43	51.3	54.3	55.4	90.3	46.5	49.9	50.5	44.5	39.5	38.5	37.5
29/08/2014 12:44	51.9	54.8	56.3	93.9	46.4	49.8	50.5	43.5	38.5	38	37
29/08/2014 12:45	62.6	64.7	65.3	88.8	53.1	55.6	56.5	49	43	42	39.5
29/08/2014 15:57	64.4	69.7	73.8	97.7	55.1	61.7	56.5	53.5	47.5	46	43
29/08/2014 15:58	50.1	53.5	55	85.8	42.9	46	46.5	41	37.5	36.5	36
29/08/2014 15:59	49.6	53	54.4	90.2	43.7	46.8	47	41.5	38.5	37.5	36.5
29/08/2014 16:00	47.7	47.5	51.2	81.3	39.8	42.1	42.5	39	37	36.5	36
29/08/2014 16:01	47.5	49.4	51.2	82.2	42.4	45.1	45	41	39	38.5	37.5
29/08/2014 16:02	49.8	52.9	54.3	84.5	42.8	45.2	45.5	41	38	37.5	37
29/08/2014 16:03	51.1	54.8	56	86.2	42.9	45.2	46	40.5	38.5	37.5	36.5
29/08/2014 16:04	49.1	51.7	54.1	84.5	42.5	45.5	46	41	37.5	37	36
29/08/2014 16:05	45.2	47.5	49.5	83.4	40.7	42.8	43	40	38	37.5	36.5
29/08/2014 16:06	46.4	48.8	50.4	80.9	41.4	43.5	43.5	40.5	38.5	38	37
29/08/2014 16:07	44.7	46.6	48.7	78.4	40.8	42.7	42.5	40.5	37.5	37	36.5
29/08/2014 16:08	46.1	49.8	52	81.3	40.8	43.1	42.5	40	38.5	38	37.5
29/08/2014 16:09	47.3	50.4	51.8	81.1	43	45.7	46	42	38.5	38.5	38
29/08/2014 16:10	48.5	51.5	53.6	82.5	42.3	44.4	44.5	41	39	38	37.5
29/08/2014 16:11	48.5	50.3	52.5	81.1	41.9	44.5	44	41	39.5	39	37.5
29/08/2014 16:12	48	50.9	52.5	85.3	43	46.1	46	41.5	38.5	38	37
29/08/2014 16:13	48	50.1	51.4	83.2	42.6	45.2	46	41	38	37.5	36.5
29/08/2014 16:14	48.1	50.1	51.1	80.9	42.3	44.4	45.5	40.5	38	37.5	37
29/08/2014 16:15	47.8	51	52.2	82.9	43.5	45.8	46.5	42.5	40	39	38
29/08/2014 16:16	47.8	50.5	52.4	84.7	43.9	46.2	47.5	42	39	38.5	37.5
29/08/2014 16:17	51.1	54.2	56.2	86.2	43.4	45.9	46	41	39	38.5	37.5
29/08/2014 16:18	51	51.8	53.3	83.2	43.6	46.3	47.5	40.5	37.5	36.5	36
29/08/2014 16:19	46.7	49.6	51.4	82.3	41.8	44.1	44.5	40.5	37.5	37	36
29/08/2014 16:20	43.3	46.8	48.2	78.7	39.9	41.5	41.5	39.5	38	37	36.5
29/08/2014 16:21	44.8	47.3	49.1	81.1	40.4	42.2	43	39.5	36.5	36.5	36
29/08/2014 16:22	46.3	50.1	51.2	83.8	40.7	42.5	42.5	40	38	37.5	36.5
29/08/2014 16:23	46.6	49.4	50.7	81.9	40.8	42.6	42.5	40	37.5	37	36.5
29/08/2014 16:24	44.9	47.4	49.6	78.9	41.1	43.1	43	41	38	37	36.5
29/08/2014 16:25	46	48.2	50.6	80.4	41.3	43	43.5	41	38	37.5	36.5
29/08/2014 16:26	45.3	49.4	51	83.1	41	43.1	43.5	40	38.5	38	36.5
29/08/2014 16:27	48.5	51.5	52.6	82.9	44.4	47	47.5	43	39.5	38.5	37.5
29/08/2014 16:28	74.9	79.2	81.1	91.2	61.2	67.6	60.5	51.5	42.5	41.5	40.5
29/08/2014 17:55	66	73.2	77.6	96.7	56.4	64.2	59.5	55.5	40	39	38
29/08/2014 17:56	43.9	46.4	47.3	76.3	39.5	40.4	41	39	38	37.5	37
29/08/2014 17:57	43.8	46.9	48.9	77.7	39.5	41.9	42	38	37.5	37	37
29/08/2014 17:58	50.5	57.2	60.7	83.2	41.9	47.3	44	39.5	37.5	37	36.5
29/08/2014 17:59	46.1	48.6	50.2	81.9	41	43.7	43.5	40	37.5	37	36.5
29/08/2014 18:00	49.2	52.4	54.3	80.4	42.5	46.2	45.5	40.5	38	37.5	37
29/08/2014 18:01	46.8	51.7	53.4	77.9	40.3	43	42.5	39	37.5	37.5	37
29/08/2014 18:02	45	48.8	50.9	78.6	40.7	43	43.5	39.5	38	37.5	37
29/08/2014 18:03	46.8	49.9	52	79.4	40.4	42.7	43	39	37.5	37	36.5
29/08/2014 18:04	44.3	46.7	48.8	74.4	39.7	41.5	41.5	39	38	38	37.5
29/08/2014 18:05	46.6	51.2	53	77.8	40.4	43.8	43	38.5	37.5	37	37
29/08/2014 18:06	45	50.4	52.7	77.7	39.8	42.6	42	38.5	37.5	37	37
29/08/2014 18:07	45.7	49.2	51.4	78.4	40.1	43.4	43	38.5	37	36.5	36
29/08/2014 18:08	45.4	49.5	51	75.6	39.3	41.6	41	38	37	37	36.5
29/08/2014 18:09	51.3	54.1	57.2	75.6	46.3	48.3	50	45	38.5	38	37
29/08/2014 18:10	48.3	50.6	51.4	72.5	42.3	44	45.5	40.5	38	38	37.5
29/08/2014 18:11	42.4	47	48.9	75.6	38.4	40.1	40	38	37	37	36.5
29/08/2014 18:12	45.8	50.7	52.2	73.3	39.1	41.7	41	38	36.5	36.5	36
29/08/2014 18:13	49.7	57.3	61	73.6	39.9	46.3	41	38	37	36.5	36.5
29/08/2014 18:14	58.7	65.8	68.6	80.5	44.6	54.3	45	39	37	36.5	36
29/08/2014 18:17	38.6	38.9	39.3	52.6	38.4	38.6	38.5	38.5	38.5	38.5	38
29/08/2014 18:18	38.6	38.8	39.3	52.8	38.4	38.6	38.5	38.5	38.5	38.5	38
29/08/2014 18:19	38.7	39	39.3	55.8	38.5	38.6	38.5	38.5	38.5	38.5	38
29/08/2014 18:20	50	57.3	62.2	86.8	44.6	48.2	45.5	45	41.5	40	39
29/08/2014 18:21	45.6	45.8	46.1	78.9	45.4	45.6	45.5	45.5	45.5	45	39.5
29/08/2014 18:22	45.7	45.9	46.3	59.1	45.5	45.7	45.5	45.5	45.5	45.5	45.5
29/08/2014 18:23	45.6	45.8	46.2	67.9	45.5	45.6	45.5	45.5	45.5	45.5	45
29/08/2014 18:24	66.8	75.3	80.2	101.2	50.8	64.3	45.5	45.5	45	45	45
29/08/2014 18:25	45	45.2	45.5	58.3	44.9	45	45	45	45	45	45
29/08/2014 18:26	45	45.2	45.5	58.3	44.9	45	45	45	45	45	44.5
29/08/2014 18:27	45	45.2	45.5	58.4	44.9	45	45	45	45	45	45
29/08/2014 18:28	46.1	49.6	52.7	73.7	45	45.9	45	45	45	45	45

Appendix F2: Air Quality Laboratory Analytical Certificates

Schedule for Job 424056-1

at SAL (Manchester (Air Division)) for Quotation Ref Q130062-1

Report For: Mr Michael Sylvester at Earth & Marine Environmental Consultants Limited, The Plaza, 100 Old Hall Street, Liverpool. L3 9QJ
Tel: 0151 223 0037 Fax: 0151 223 0038 Email: michael.sylvester@eame.co.uk

Date Received: 22-Sep-2014 **Logged in:** 23-September-2014 **Report due:** 07-October-2014

Project ID Purchase Order Project Site Customer Reference

Passive Diffusion Badge

SAL Number	Sample Type	Sample Condition	Customer Reference	NO+NO2 (Colorimetry)	SO2 (IC)
6	Passive Diffusion Badge	Ok	366903+366910 AQMS 01	x	
7	Passive Diffusion Badge	Ok	366904+366911 AQMS 02	x	
8	Passive Diffusion Badge	Ok	366905+366912 AQMS 03	x	
9	Passive Diffusion Badge	Ok	366906+366913 AQMS 04	x	
10	Passive Diffusion Badge	Ok	366907+366914 AQMS 05	x	
11	Passive Diffusion Badge	Ok	366917 AQMS 01		x
12	Passive Diffusion Badge	Ok	366918 AQMS 02		x
13	Passive Diffusion Badge	Ok	366919 AQMS 03		x
14	Passive Diffusion Badge	Ok	366920 AQMS 04		x
15	Passive Diffusion Badge	Ok	366922 AQMS 05		x

Tube (Tenax)

SAL Number	Sample Type	Sample Condition	Customer Reference	Suite A (Suite)
1	Tube (Tenax)	Ok	1 AQMS 1 11/08-10/09	x
2	Tube (Tenax)	Ok	2 AQMS 2 11/08-10/09	x
3	Tube (Tenax)	Ok	3 AQMS 3 11/08-10/09	x
4	Tube (Tenax)	Ok	4 AQMS 4 11/08-10/09	x
5	Tube (Tenax)	Ok	5 AQMS 5 11/08-10/09	x

Please find confirmation of samples received and the tests scheduled on them.

- Unless we hear from you within 24 hrs, we shall assume we have scheduled your samples correctly and that you wish us to proceed with any samples noted as deviating.
- Deviating samples are analysed on the understanding that they will be paid for within our normal terms and conditions.
  Further information about deviating samples can be found at
  http://www.salltd.co.uk/about_us/deviating_samples
- Samples will be retained until Thursday 23rd October 2014. Please contact us if you wish them to be retained beyond this date.
- Perishable samples for microbiology testing (excluding shelf life studies) will only be retained until the report has been issued.

Price Estimate for Job 424056-1			
Multiple	**Test**	**Price(ea.)**	**Total**
5	Suite A	£60.00	£300.00
5	Nitrogen oxide and dioxide	£30.00	£150.00
5	Sulphur Dioxide	£25.00	£125.00
		Total:	**£575.00**

Prices exclude VAT, and are to be taken as an approximation only.
Additional Sample Disposal costs will be charged where applicable.
Minimum Invoice charge of £25 will be applied.

Suites used in this Job

Suite A in Tube (Tenax)

Analysis	Technique	LOD	Accreditation
Number of additional significant peaks	Calc		none
VOC (Total excluding targets)	GC/MS (TD)	50 ng	none
Volatile Organic Compounds (Top 10 Screen)	GC/MS (TD)	50 ng	none

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2404

Scientific Analysis Laboratories Ltd

Certificate of Analysis

Report Number: 424056-3

Date of Report: 14-Oct-2014

Customer: Earth & Marine Environmental Consultants Limited
The Plaza
100 Old Hall Street
Liverpool
L3 9QJ

Customer Contact: Mr Michael Sylvester

Customer Job Reference:
Date Job Received at SAL: 22-Sep-2014
Date Analysis Started: 26-Sep-2014
Date Analysis Completed: 14-Oct-2014

The results reported relate to samples received in the laboratory
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs
All results have been reviewed in accordance with QP22

Report checked and authorised by :
Kayleigh McCann
Project Manager

Issued by :
Kayleigh McCann
Project Manager

SAL Reference: 424056

Customer Reference:

Passive Badge (Triethylamine / Mol Sieve) Analysed as Passive Badge (Triethylamine / Mol Sieve)

Miscellaneous

				SAL Reference	**424056 006**	**424056 007**	**424056 008**	**424056 009**	**424056 010**
				Customer Sample Reference	**366903+366910 AQMS 01**	**366904+366911 AQMS 02**	**366905+366912 AQMS 03**	**366906+366913 AQMS 04**	**366907+366914 AQMS 05**
				Test Sample	**AR**	**AR**	**AR**	**AR**	**AR**
Determinand	**Method**	**LOD**	**Units**	**Symbol**					
Nitric oxide	Colorimetric (Sub)	0.03	µg	SU	**0.06**	<0.03	<0.03	<0.03	<0.03
Nitric oxide	Calc (ppb)		ppb v/v	SN	**0.64**	N.D.	N.D.	N.D.	N.D.
Nitric oxide	Calc (ug/m3)		µg/m3	SN	**1.2**	N.D.	N.D.	N.D.	N.D.
Nitrogen dioxide	Colorimetric (Sub)	0.03	µg	SU	**0.27**	**1.4**	**1.3**	**1.6**	**1.5**
Nitrogen dioxide	Calc (ppb)		ppb v/v	SN	**2.7**	**14**	**13**	**16**	**15**
Nitrogen dioxide	Calc (ug/m3)		µg/m3	SN	**5.1**	**27**	**25**	**31**	**28**

SAL Reference: 424056

Customer Reference:

Passive Diffusion Badge Analysed as Passive Diffusion Badge

Miscellaneous

				SAL Reference	**424056 011**	**424056 012**	**424056 013**	**424056 014**	**424056 015**
				Customer Sample Reference	**366917 AQMS 01**	**366918 AQMS 02**	**366919 AQMS 03**	**366920 AQMS 04**	**366922 AQMS 05**
				Test Sample	**AR**	**AR**	**AR**	**AR**	**AR**
Determinand	**Method**	**LOD**	**Units**	**Symbol**					
Sulphur Dioxide	IC	0.05	µg	SN	**1.1**	**3.6**	**0.99**	**0.60**	**0.98**
Sulphur Dioxide	Calc (ug/m3)		µg/m3	SN	**56**	**180**	**50**	**30**	**49**
Sulphur Dioxide	Calc (ppb)		ppb	SN	**21**	**68**	**19**	**11**	**18**

SAL Reference: 424056

Customer Reference:

Tube (Tenax) Analysed as Tube (Tenax)

Suite A

				SAL Reference	**424056 001**		**424056 002**
				Customer Sample Reference	**1 AQMS 1 11/08-10/09**		**2 AQMS 2 11/08-10/09**
				Test Sample	**AR**		**AR**
Determinand	**Method**	**LOD**	**Units**	**Symbol**			
Number of additional significant peaks	Calc			N	N.D.		N.D.
VOC (Total excluding targets)	GC/MS (TD)	50	ng	N	**140**		**62**
Volatile Organic Compounds (Top 10 Screen)	GC/MS (TD)	50	ng	N	Phenylmaleic anhydride	**64**	<50
					Toluene	**76**	

SAL Reference: 424056

Customer Reference:

Tube (Tenax) Analysed as Tube (Tenax)

Suite A

				SAL Reference	**424056 003**		**424056 004**
				Customer Sample Reference	**3 AQMS 3 11/08-10/09**		**4 AQMS 4 11/08-10/09**
				Test Sample	**AR**		**AR**
Determinand	**Method**	**LOD**	**Units**	**Symbol**			
Number of additional significant peaks	Calc			N	N.D.		N.D.
VOC (Total excluding targets)	GC/MS (TD)	50	ng	N	<50		<50
Volatile Organic Compounds (Top 10 Screen)	GC/MS (TD)	50	ng	N	<50		<50

SAL Reference: 424056
Customer Reference:

Tube (Tenax) Analysed as Tube (Tenax)
Suite A

SAL Reference	**424056 005**
Customer Sample Reference	**5 AQMS 5 11/08-10/09**
Test Sample	**AR**

Determinand	Method	LOD	Units	Symbol	
Number of additional significant peaks	Calc			N	N.D.
VOC (Total excluding targets)	GC/MS (TD)	50	ng	N	**170**
Volatile Organic Compounds (Top 10 Screen)	GC/MS (TD)	50	ng	N	Phenylmaleic anhydride **58** Toluene **320**

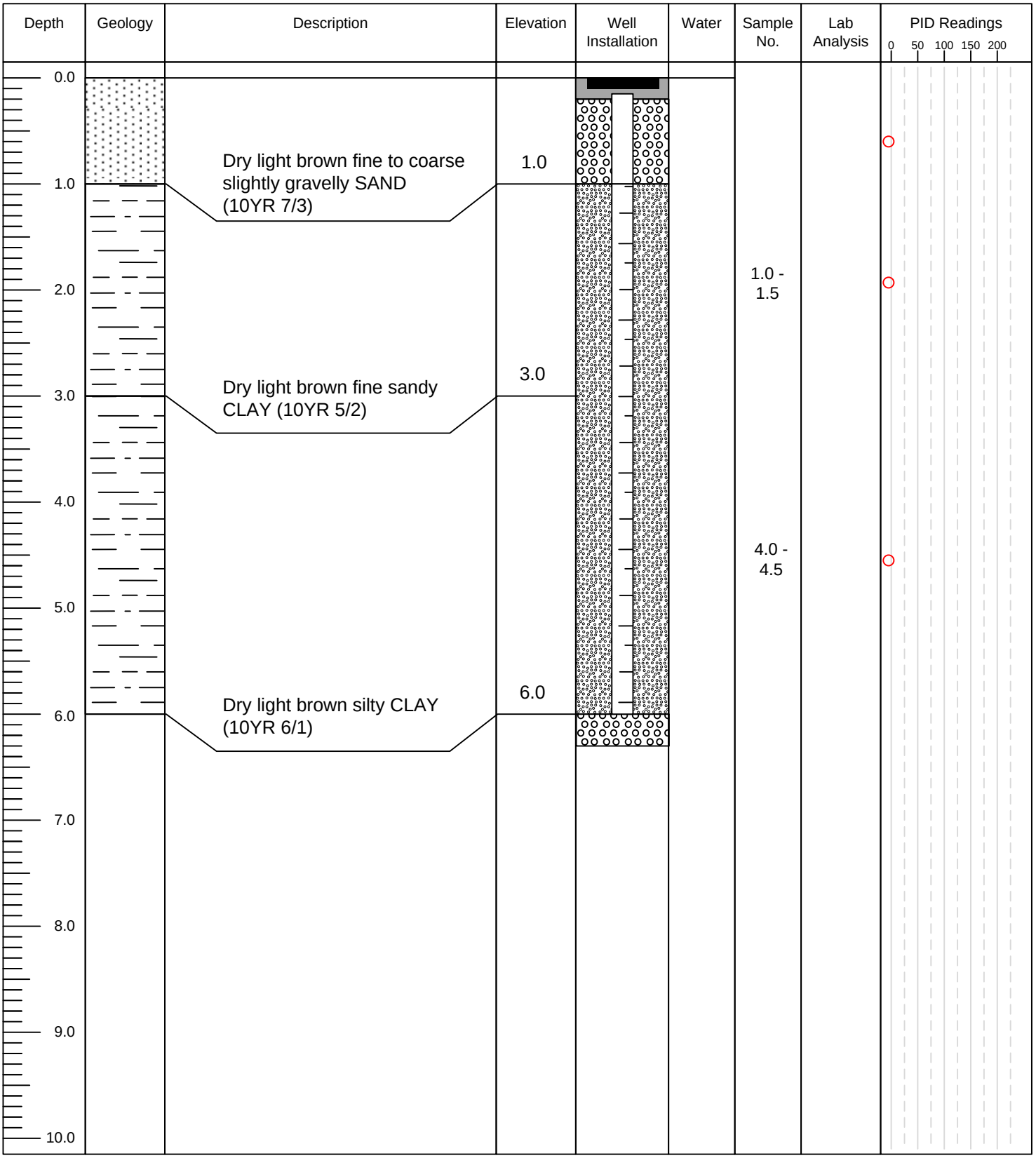
Index to symbols used in 424056-3

Value	Description
AR	As Received
N.D.	Not Detected
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Appendix G: Chapter 6 Technical Reports

Appendix G1: Lithological Logs

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'32"N 47°53'28"E	BH01
Client	Project Ref.	Datum	Sheet	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	3.709 m IGRS	01 of 01	
Plant and Equipment Used		Logged by		
Continuous Flight Auger		David Wells		



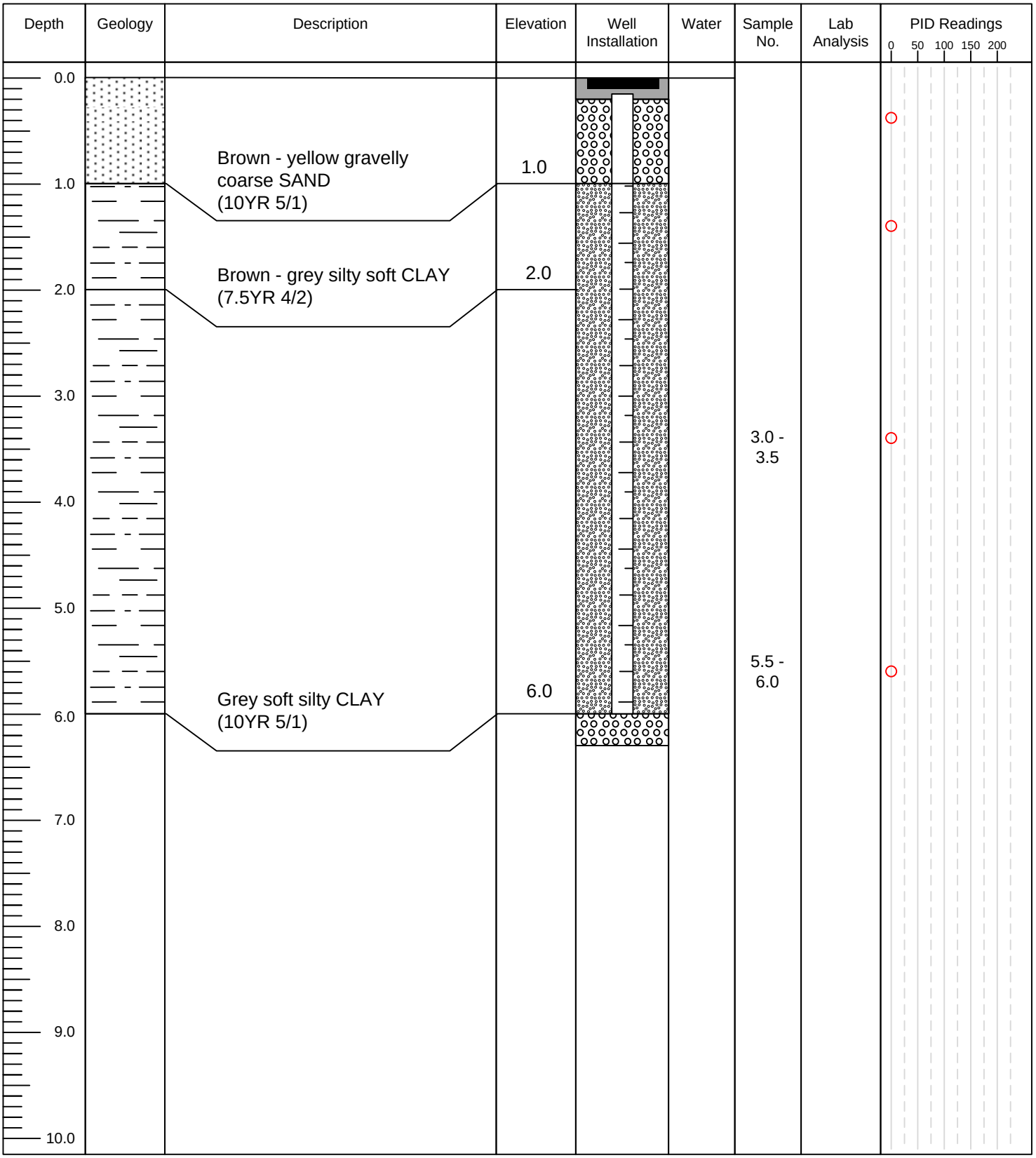
Remarks

No water observed during drilling phase.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'40"N 47°53'31"E	BH02
Client	Project Ref.	Datum	Sheet	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	4.628 m IGRS	01 of 01	
Plant and Equipment Used		Logged by		
Continuous Flight Auger		David Wells		



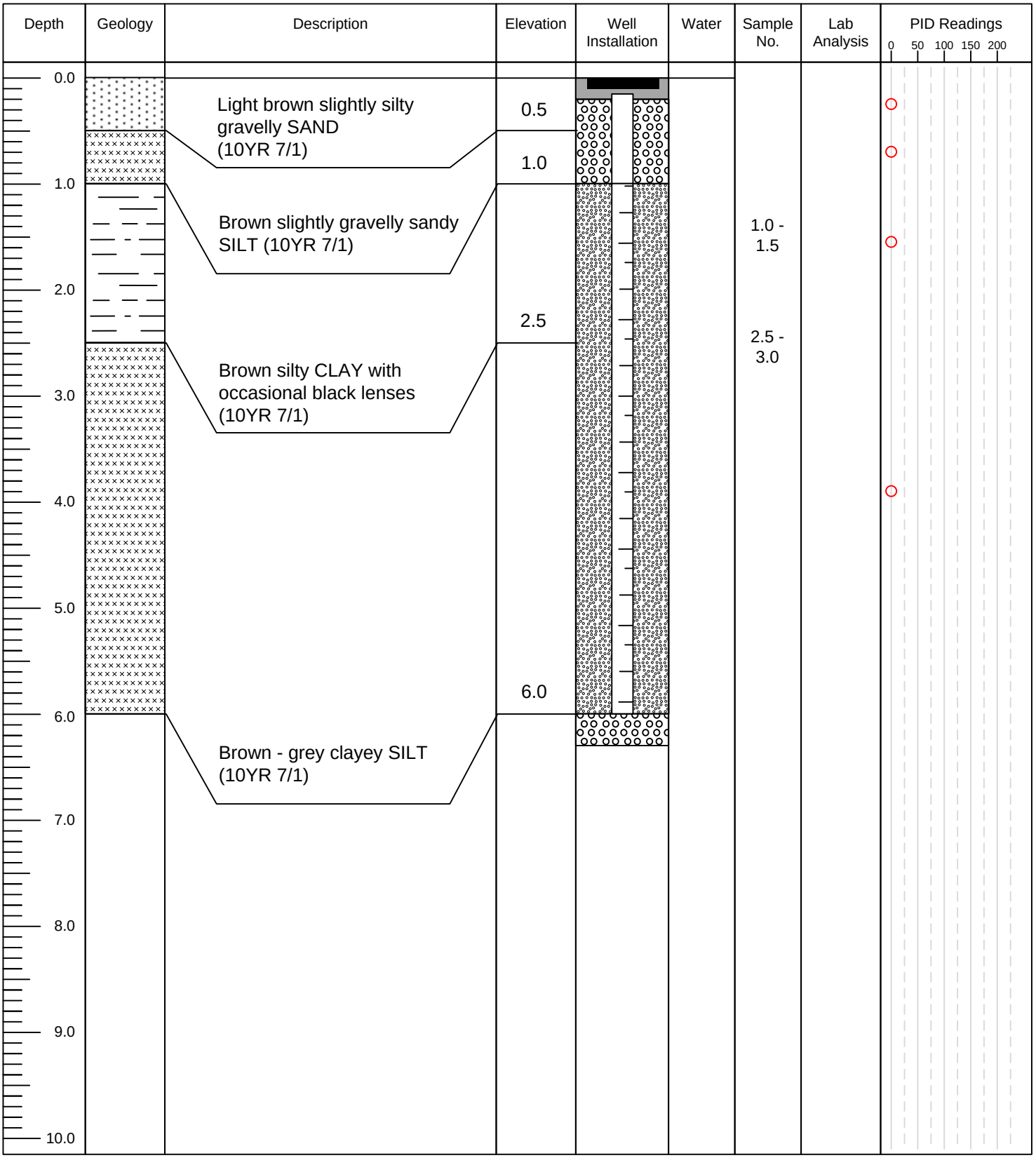
Remarks

No water observed during drilling phase.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'45"N 47°53'27"E	BH03
Client	Project Ref.	Datum	Sheet	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	5.228 m IGRS	01 of 01	
Plant and Equipment Used		Logged by		
Continuous Flight Auger		David Wells		



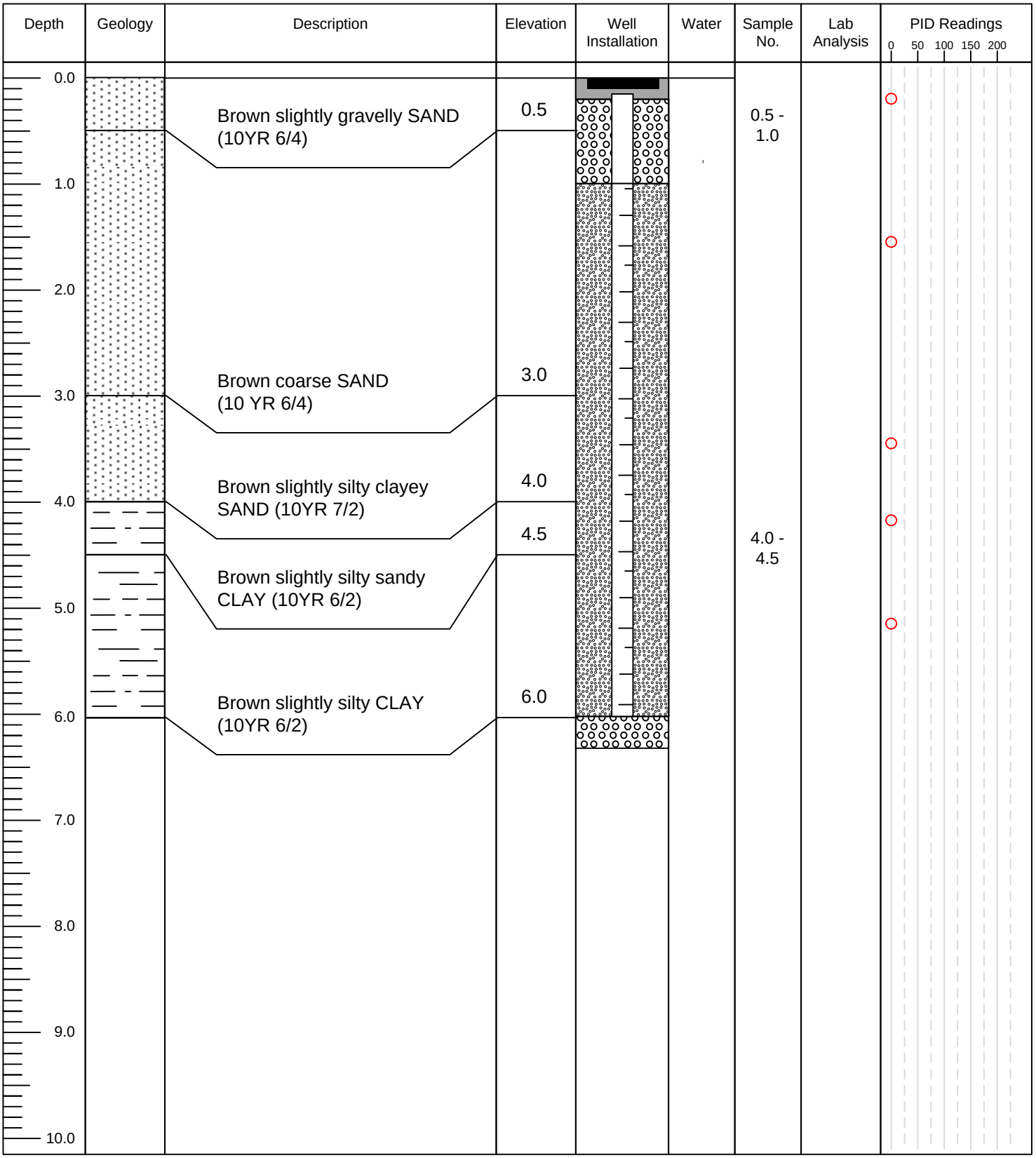
Remarks

No water observed during drilling phase.

EAME
Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'38"N 47°53'25"E	BH04
Client	**Project Ref.**	**Datum**	**Sheet**	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	4.276 m IGRS	01 of 01	
Plant and Equipment Used		**Logged by**		
Continuous Flight Auger		David Wells		

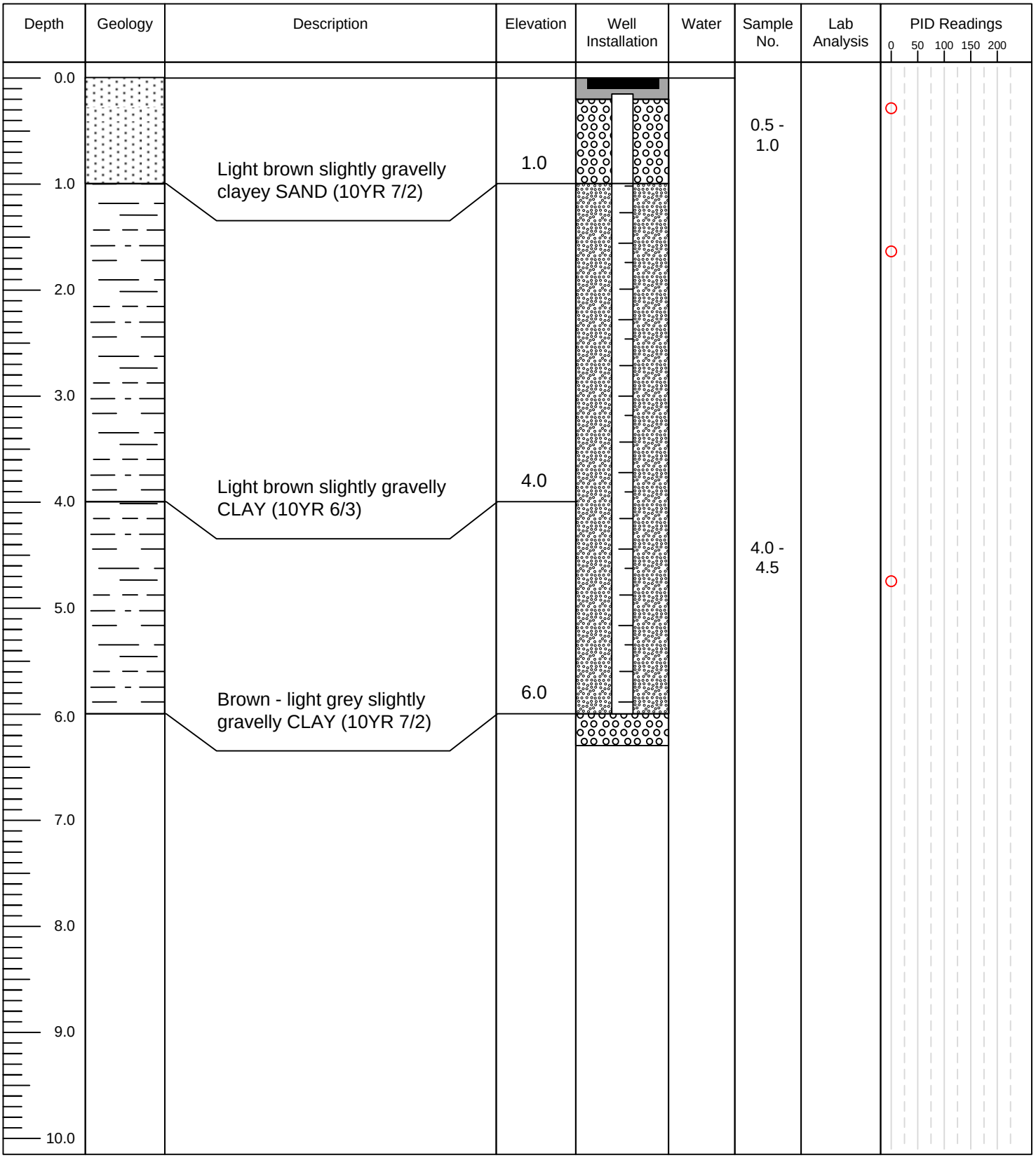


Remarks

No water observed during drilling phase.

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'09"N 47°53'27"E	BH05
Client	Project Ref.	Datum	Sheet	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	4.09 m IGRS	01 of 01	
Plant and Equipment Used		Logged by		
Continuous Flight Auger		David Wells		



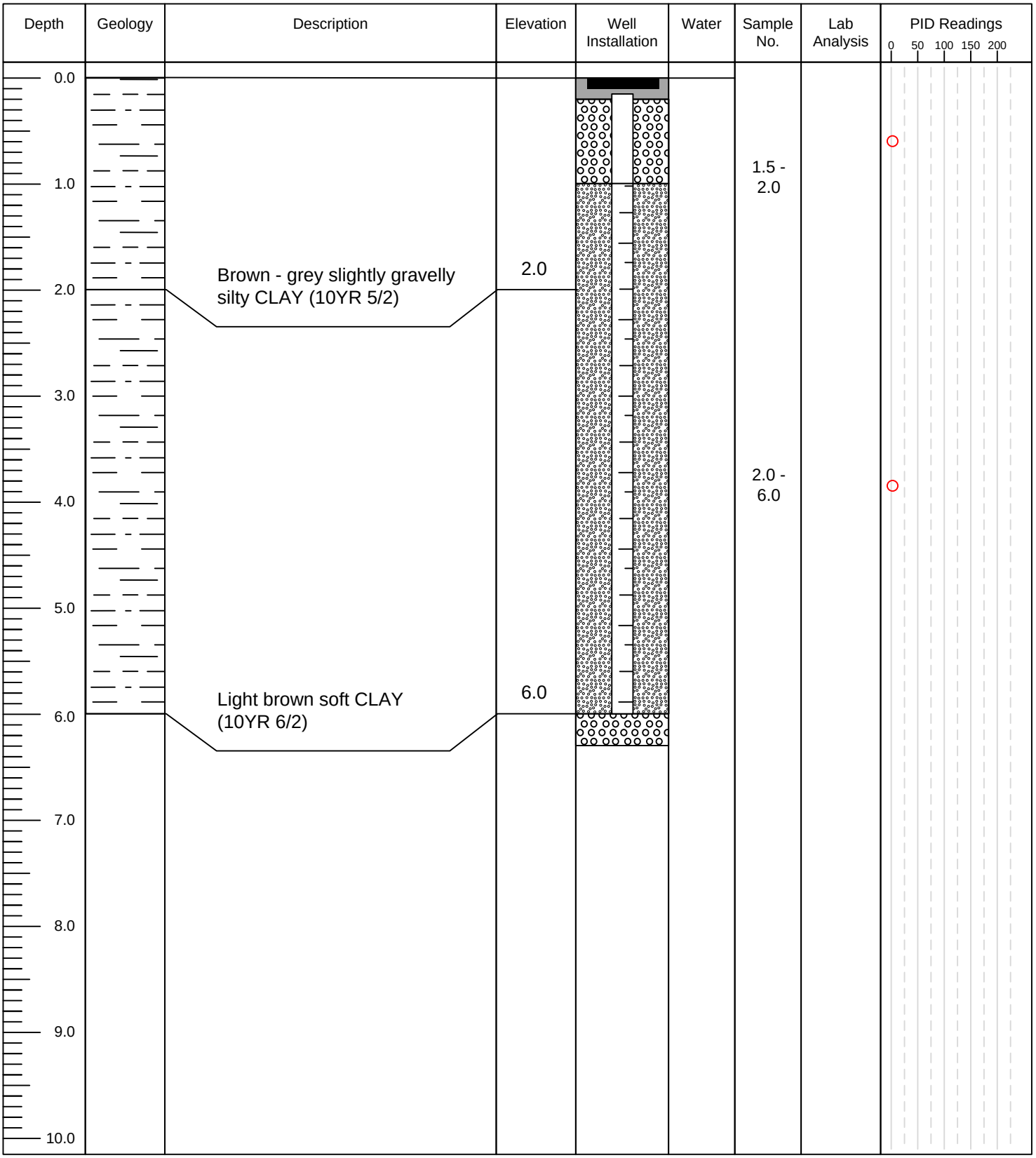
Remarks

No water observed during drilling phase.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'38"N 47°53'25"E	BH06
Client	**Project Ref.**	**Datum**	**Sheet**	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	4.686 m IGRS	01 of 01	
Plant and Equipment Used		**Logged by**		
Continuous Flight Auger		David Wells		



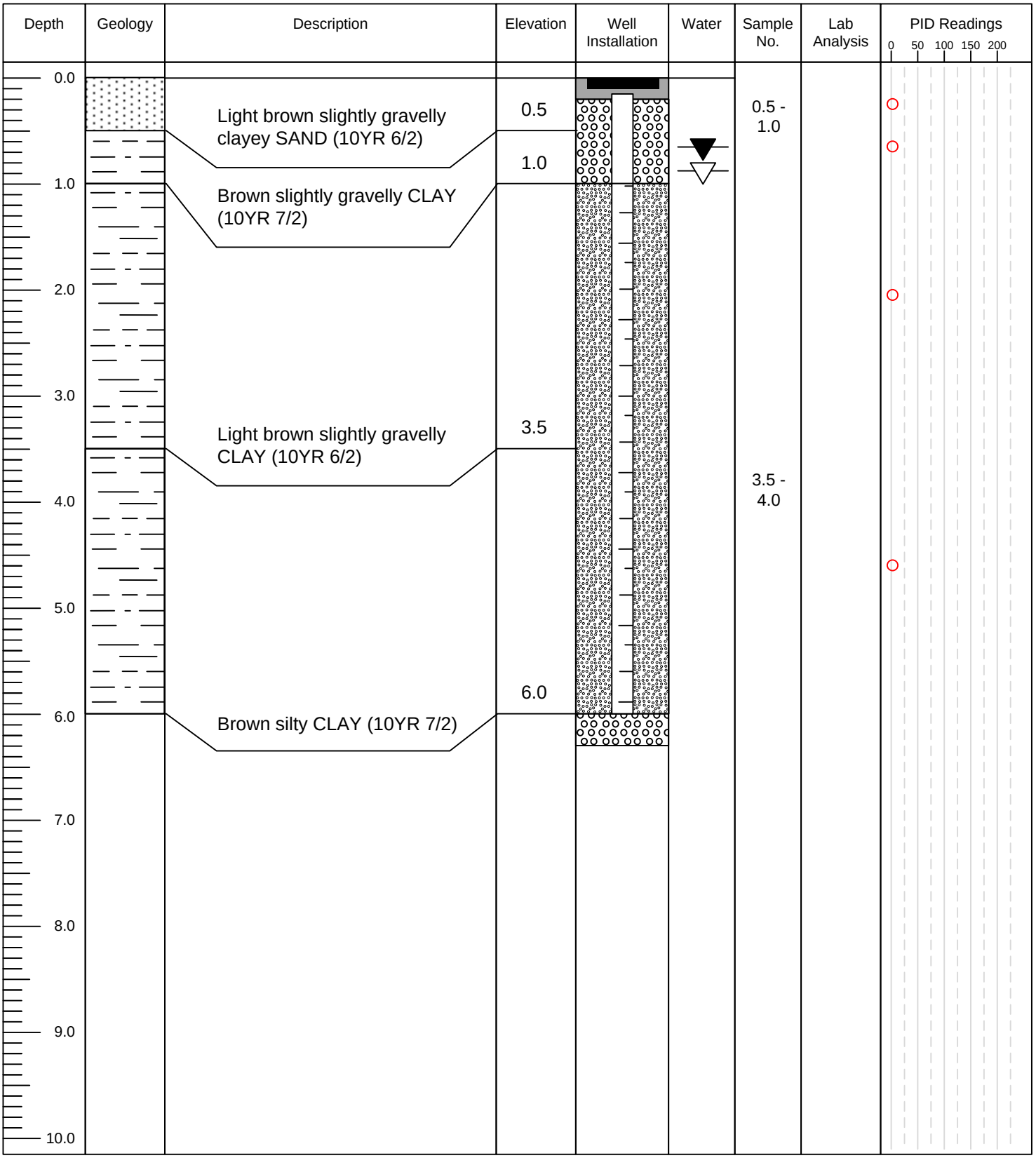
Remarks

No water observed during drilling phase.

EAME Earth & Marine Environmental Consultants

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Project		Date	Co-ordinates	Reference
ESIA Iraq Oil Terminal Project, Iraq		Start: 13/08/14 Finish: 13/08/14	30°10'32"N 47°53'28"E	BH07
Client	**Project Ref.**	**Datum**	**Sheet**	
Waterway Trading and Petroleum Services LLC (WTPS)	014-1287	4.851 m IGRS	01 of 01	
Plant and Equipment Used		**Logged by**		
Continuous Flight Auger		David Wells		



Remarks

Note: These logs are based on driller/environmental observations and are logged generally in accordance with BS 5930:1999 Code of practice for site investigations. These field observations should not be used for design and/or engineering purposes.

Symbols for Soils and Rocks

British Standards Institute (1999). BS 5930:1999
Code of practice for site investigations.

Soils	Sedimentary	Metamorphic	Igneous
Made Ground	Chalk	Coarse grained	Coarse grained
Gravel	Limestone	Medium grained	Medium grained
Sand	Sandstone	Fine grained	Fine grained
Silt	Siltstone	Pyroclastic	
Clay	Mudstone		
Peat	Shale		
Silty Sand	Coal		

Well Installation

- Well cover
- Plain pipework
- Slotted pipework
- Bentonite pellets
- Pea gravel
- Bentonite seal
- PID Reading
- Rest water level
- Water strike

Appendix G2: Soil Sample Laboratory Analytical Certificates

David Wells
Earth & Marine Enviromental Consultants
6 Bell Yard
WC2A 2JR
London

t: 01322 665566
f: 01322 661480
e: david.wells@eame.co.uk

i2 Analytical Ltd.
ul.Pionierów 39,
41-711 Ruda Slaska,
Poland

t: 004832 3426011
f: 004832 3426012

Analytical Report Number : 14-59242

Replaces Analytical Report Number : 14-59242, issue no. 1

Project / Site name:	WTPS ESIA	**Samples received on:**	29/08/2014
Your job number:		**Samples instructed on:**	01/09/2014
Your order number:		**Analysis completed by:**	08-09-2014
Report Issue Number:	2	**Report issued on:**	12/12/2014
Samples Analysed:	34 soil samples		

Dariusz Piotrowski
V-ce Dyrektor ds. Technicznych

Signed:

Dariusz Piotrowski
Technical Manager
For & on behalf of i2 Analytical Ltd.

i2 Analytical Limited Sp. z o.o.
Oddział w Polsce
ul. Pionierów 39
41-711 Ruda Śląska
NIP 2050000762

Agnieszka Pietrowska
Kierownik ds. jakości

Signed:

Agnieszka Pietrowska
Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: Building 19,BRE,Garston, Watford, WD25 9XX

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368151	368152	368153	368154	368155
Sample Reference			BH01	BH01	BH02	BH02	BH03
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0-1.5	4.5-5.0	3.0-3.5	5.5-6.0	1.0-1.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	17	16	19	20	14
Asbestos Identification Name	Type	N/A	-	-	-	-	-
Asbestos in Soil Screen	Type	N/A	-	-	-	-	-
General Inorganics							
pH	pH Units	N/A	7.4	8.0	8.0	8.1	7.9
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	13000	6400	7900	4700	11000
Total Sulphate as SO_4	%	0.01	1.29	0.640	0.795	0.469	1.12
Total Chloride	mg/kg	5	14000	11000	16000	12000	13000
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.59
Total Nitrogen (Kjeldahl)	mg/kg	5	280	220	620	450	220
Total Organic Carbon (TOC)	%	0.1	0.7	0.4	0.4	0.8	0.7
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368151	368152	368153	368154	368155
Sample Reference			BH01	BH01	BH02	BH02	BH03
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0-1.5	4.5-5.0	3.0-3.5	5.5-6.0	1.0-1.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	2.6	2.3	2.7	2.4	4.2
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	19	18	24	21	20
Iron (aqua regia extractable)	mg/kg	40	17000	15000	21000	18000	19000
Lead (aqua regia extractable)	mg/kg	1	2.2	1.8	2.1	2.2	2.4
Manganese (aqua regia extractable)	mg/kg	1	330	300	340	320	280
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	60	57	73	67	63
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	26	25	31	30	28
Magnesium (aqua regia extractable)	mg/kg	20	22000	19000	25000	22000	18000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Chloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Bromomethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	< 1.0	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	< 1.0	-	< 1.0	-	-
Trichloromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	< 1.0	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	< 1.0	-	< 1.0	-	-
Benzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	< 1.0	-	< 1.0	-	-
Trichloroethene	µg/kg	1	< 1.0	-	< 1.0	-	-
Dibromomethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	< 1.0	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	< 1.0	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368151	368152	368153	368154	368155
Sample Reference			BH01	BH01	BH02	BH02	BH03
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0-1.5	4.5-5.0	3.0-3.5	5.5-6.0	1.0-1.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	< 1.0	-	< 1.0	-	-
Styrene	µg/kg	1	< 1.0	-	< 1.0	-	-
Tribromomethane	µg/kg	1	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	< 1.0	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Bromobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
N-Propylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	< 1.0	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Butylbenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	< 1.0	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	< 1.0	-	< 1.0	-	-

SVOCs

Aniline	mg/kg	0.1	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Naphthalene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dichlorophenol	mg/kg	0.3	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	-	-	-	-	< 0.1

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368151	368152	368153	368154	368155
Sample Reference			BH01	BH01	BH02	BH02	BH03
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0-1.5	4.5-5.0	3.0-3.5	5.5-6.0	1.0-1.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	-	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.1	-	-	-	-	< 0.10
Acenaphthene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dinitrotoluene	mg/kg	0.2	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	-	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	-	-	-	-	< 0.2
Fluorene	mg/kg	0.1	-	-	-	-	< 0.10
Azobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Phenanthrene	mg/kg	0.1	-	-	-	-	< 0.10
Anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Carbazole	mg/kg	0.3	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Butyl benzyl phthalate	mg/kg	0.3	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Chrysene	mg/kg	0.05	-	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	-	-	-	-	< 0.05
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368156	368157	368158	368159	368160
Sample Reference			BH03	BH04	BH04	BH05	BH05
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			2.5-3.0	0.5-1.0	4.0-4.5	0.5-1.0	4.0-4.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	21	9.8	17	27	24
Asbestos Identification Name	Type	N/A	-	-	-	-	-
Asbestos in Soil Screen	Type	N/A	-	-	-	-	-
General Inorganics							
pH	pH Units	N/A	8.2	8.2	8.1	8.4	8.2
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	6500	72000	17000	5600	5800
Total Sulphate as SO_4	%	0.01	0.648	7.18	1.67	0.556	0.584
Total Chloride	mg/kg	5	17000	870	17000	22000	14000
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	< 0.10	0.11	0.20	0.21	0.19
Total Nitrogen (Kjeldahl)	mg/kg	5	230	230	200	330	310
Total Organic Carbon (TOC)	%	0.1	0.8	0.4	0.4	0.4	0.6
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368156	368157	368158	368159	368160
Sample Reference			BH03	BH04	BH04	BH05	BH05
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			2.5-3.0	0.5-1.0	4.0-4.5	0.5-1.0	4.0-4.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	3.7	1.6	3.6	6.6	5.8
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	25	5.8	27	29	24
Iron (aqua regia extractable)	mg/kg	40	23000	4500	22000	24000	23000
Lead (aqua regia extractable)	mg/kg	1	2.8	< 1.0	2.6	3.4	2.7
Manganese (aqua regia extractable)	mg/kg	1	380	79	310	380	320
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	75	12	69	81	68
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	33	11	32	41	33
Magnesium (aqua regia extractable)	mg/kg	20	23000	5100	31000	18000	20000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Chloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Bromomethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Vinyl Chloride	µg/kg	1	-	< 1.0	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1-dichloroethene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1-dichloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	-	< 1.0	-	-	< 1.0
Trichloromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2-dichloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	-	< 1.0	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-	< 1.0
Benzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2-dichloropropane	µg/kg	1	-	< 1.0	-	-	< 1.0
Trichloroethene	µg/kg	1	-	< 1.0	-	-	< 1.0
Dibromomethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Bromodichloromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	-	< 1.0	-	-	< 1.0
Dibromochloromethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Tetrachloroethene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Chlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368156	368157	368158	368159	368160
Sample Reference			BH03	BH04	BH04	BH05	BH05
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			2.5-3.0	0.5-1.0	4.0-4.5	0.5-1.0	4.0-4.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
p & m-xylene	µg/kg	1	-	< 1.0	-	-	< 1.0
Styrene	µg/kg	1	-	< 1.0	-	-	< 1.0
Tribromomethane	µg/kg	1	-	< 1.0	-	-	< 1.0
o-xylene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-	< 1.0
Isopropylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Bromobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
N-Propylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	-	< 1.0	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Tert-Butylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Sec-Butylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,3-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
P-Isopropyltoluene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,4-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Butylbenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	-	< 1.0	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-	< 1.0

SVOCs

Aniline	mg/kg	0.1	-	< 0.1	-	-	-
Phenol	mg/kg	0.2	-	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	-	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	-	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	-	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	-	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	-	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	-	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	-	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	-	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	-	< 0.2	-	-	-
Isophorone	mg/kg	0.2	-	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	-	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	-	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	-	< 0.3	-	-	-
Naphthalene	mg/kg	0.1	-	< 0.10	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	-	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	-	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	-	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	-	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	-	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	-	< 0.1	-	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368156	368157	368158	368159	368160
Sample Reference			BH03	BH04	BH04	BH05	BH05
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			2.5-3.0	0.5-1.0	4.0-4.5	0.5-1.0	4.0-4.5
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	13/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	-	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	-	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	-	< 0.1	-	-	-
Acenaphthylene	mg/kg	0.1	-	< 0.10	-	-	-
Acenaphthene	mg/kg	0.1	-	< 0.10	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	-	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	-	< 0.2	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	-	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	-	< 0.2	-	-	-
Fluorene	mg/kg	0.1	-	< 0.10	-	-	-
Azobenzene	mg/kg	0.3	-	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	-	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	-	< 0.3	-	-	-
Phenanthrene	mg/kg	0.1	-	< 0.10	-	-	-
Anthracene	mg/kg	0.1	-	< 0.10	-	-	-
Carbazole	mg/kg	0.3	-	< 0.3	-	-	-
Dibutyl phthalate	mg/kg	0.2	-	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	-	< 0.3	-	-	-
Fluoranthene	mg/kg	0.1	-	< 0.10	-	-	-
Pyrene	mg/kg	0.1	-	< 0.10	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	-	< 0.3	-	-	-
Benzo(a)anthracene	mg/kg	0.1	-	< 0.10	-	-	-
Chrysene	mg/kg	0.05	-	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	-	< 0.10	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	-	< 0.10	-	-	-
Benzo(a)pyrene	mg/kg	0.1	-	< 0.10	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	< 0.10	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	-	< 0.10	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	-	< 0.05	-	-	-
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368161	368162	368163	368164	368165
Sample Reference			BH06	BH06	BH07	BH07	SS01
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.5-2.0	5.5-6.0	0.5-1.0	3.5-4.0	SURFACE
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	15	13	20	7.1	3.0
Asbestos Identification Name	Type	N/A	-	-	-	-	-
Asbestos in Soil Screen	Type	N/A	-	-	-	-	Not-detected
General Inorganics							
pH	pH Units	N/A	8.0	8.2	8.0	7.8	8.0
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	5600	1900	2900	12000	32000
Total Sulphate as SO_4	%	0.01	0.560	0.193	0.291	1.21	3.19
Total Chloride	mg/kg	5	15000	5700	8700	16000	8800
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	0.16	< 0.10	< 0.10	0.10	0.13
Total Nitrogen (Kjeldahl)	mg/kg	5	200	220	200	300	160
Total Organic Carbon (TOC)	%	0.1	0.9	0.3	0.3	0.9	0.9
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368161	368162	368163	368164	368165
Sample Reference			BH06	BH06	BH07	BH07	SS01
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.5-2.0	5.5-6.0	0.5-1.0	3.5-4.0	SURFACE
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	5.3	1.5	1.6	5.1	3.4
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	24	9.3	8.4	21	14
Iron (aqua regia extractable)	mg/kg	40	24000	8600	6500	16000	14000
Lead (aqua regia extractable)	mg/kg	1	3.5	2.3	2.0	8.5	2.5
Manganese (aqua regia extractable)	mg/kg	1	370	180	150	260	220
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	72	21	21	52	38
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	36	16	12	30	22
Magnesium (aqua regia extractable)	mg/kg	20	24000	5000	4800	13000	25000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	-	-	< 1.0	-	-
Chloroethane	µg/kg	1	-	-	< 1.0	-	-
Bromomethane	µg/kg	1	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	-	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloromethane	µg/kg	1	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
Benzene	µg/kg	1	-	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1	-	-	< 1.0	-	-
Dibromomethane	µg/kg	1	-	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Toluene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	-	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368161	368162	368163	368164	368165
Sample Reference			BH06	BH06	BH07	BH07	SS01
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.5-2.0	5.5-6.0	0.5-1.0	3.5-4.0	SURFACE
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	-	-	< 1.0	-	-
p & m-xylene	µg/kg	1	-	-	< 1.0	-	-
Styrene	µg/kg	1	-	-	< 1.0	-	-
Tribromomethane	µg/kg	1	-	-	< 1.0	-	-
o-xylene	µg/kg	1	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	-	-	< 1.0	-	-
Bromobenzene	µg/kg	1	-	-	< 1.0	-	-
N-Propylbenzene	µg/kg	1	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	-	-	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	-	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-

SVOCs

Aniline	mg/kg	0.1	< 0.1	-	-	-	< 0.1
Phenol	mg/kg	0.2	< 0.2	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	< 0.1	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	< 0.2	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	< 0.2	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	< 0.1	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	< 0.1	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	< 0.05	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	< 0.3	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Isophorone	mg/kg	0.2	< 0.2	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	< 0.3	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	< 0.3	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Naphthalene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
2,4-Dichlorophenol	mg/kg	0.3	< 0.3	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	< 0.1	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	< 0.1	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	< 0.1	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	< 0.1	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	< 0.2	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	< 0.1	-	-	-	< 0.1

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368161	368162	368163	368164	368165
Sample Reference			BH06	BH06	BH07	BH07	SS01
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.5-2.0	5.5-6.0	0.5-1.0	3.5-4.0	SURFACE
Date Sampled			13/08/2014	13/08/2014	13/08/2014	13/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	< 0.1	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	< 0.1	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	< 0.1	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
2,4-Dinitrotoluene	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	< 0.2	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	< 0.2	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Fluorene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Azobenzene	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Phenanthrene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Anthracene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Carbazole	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	< 0.2	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Fluoranthene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Pyrene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Butyl benzyl phthalate	mg/kg	0.3	< 0.3	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Chrysene	mg/kg	0.05	< 0.05	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	-	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	-	-	-	< 0.05
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368166	368167	368168	368169	368170
Sample Reference			SS02	SS03	SS04	SS05	SS06
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	0.51	0.67	1.1	6.0	4.2
Asbestos Identification Name	Type	N/A	-	Chrysotile- Loose fibres	-	-	-
Asbestos in Soil Screen	Type	N/A	Not-detected	Detected	Not-detected	-	-
General Inorganics							
pH	pH Units	N/A	8.0	8.1	8.3	8.0	7.5
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	11000	18000	130000	53000	44000
Total Sulphate as SO_4	%	0.01	1.09	1.82	12.7	5.25	4.39
Total Chloride	mg/kg	5	10000	9200	8700	10000	11000
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	0.19	0.28	0.16	0.13	< 0.10
Total Nitrogen (Kjeldahl)	mg/kg	5	160	270	300	490	380
Total Organic Carbon (TOC)	%	0.1	0.8	1.4	0.7	1.7	1.5
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368166	368167	368168	368169	368170
Sample Reference			SS02	SS03	SS04	SS05	SS06
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	5.6	3.4	3.0	4.1	6.6
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	20	25	10	27	27
Iron (aqua regia extractable)	mg/kg	40	18000	7100	7800	26000	25000
Lead (aqua regia extractable)	mg/kg	1	4.4	46	< 1.0	1.7	2.6
Manganese (aqua regia extractable)	mg/kg	1	260	270	130	330	330
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	52	57	28	79	77
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	1.3	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	43	120	13	36	37
Magnesium (aqua regia extractable)	mg/kg	20	21000	9700	11000	37000	33000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	-	-	< 1.0	-	-
Chloroethane	µg/kg	1	-	-	< 1.0	-	-
Bromomethane	µg/kg	1	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	-	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloromethane	µg/kg	1	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
Benzene	µg/kg	1	-	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1	-	-	< 1.0	-	-
Dibromomethane	µg/kg	1	-	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Toluene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	-	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368166	368167	368168	368169	368170
Sample Reference			SS02	SS03	SS04	SS05	SS06
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	-	-	< 1.0	-	-
p & m-xylene	µg/kg	1	-	-	< 1.0	-	-
Styrene	µg/kg	1	-	-	< 1.0	-	-
Tribromomethane	µg/kg	1	-	-	< 1.0	-	-
o-xylene	µg/kg	1	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	-	-	< 1.0	-	-
Bromobenzene	µg/kg	1	-	-	< 1.0	-	-
N-Propylbenzene	µg/kg	1	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	-	-	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	-	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-

SVOCs

Aniline	mg/kg	0.1	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Naphthalene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dichlorophenol	mg/kg	0.3	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	-	-	-	-	< 0.1

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368166	368167	368168	368169	368170
Sample Reference			SS02	SS03	SS04	SS05	SS06
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	-	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.1	-	-	-	-	< 0.10
Acenaphthene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dinitrotoluene	mg/kg	0.2	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	-	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	-	-	-	-	< 0.2
Fluorene	mg/kg	0.1	-	-	-	-	< 0.10
Azobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Phenanthrene	mg/kg	0.1	-	-	-	-	< 0.10
Anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Carbazole	mg/kg	0.3	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Butyl benzyl phthalate	mg/kg	0.3	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Chrysene	mg/kg	0.05	-	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	-	-	-	-	< 0.05
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368171	368172	368173	368174	368175
Sample Reference			SS07	SS08	SS09	SS10	SS11
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	5.7	4.7	0.91	4.2	1.9
Asbestos Identification Name	Type	N/A	-	-	-	-	-
Asbestos in Soil Screen	Type	N/A	-	-	-	-	-
General Inorganics							
pH	pH Units	N/A	7.8	7.9	7.8	7.9	8.1
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	38000	22000	35000	42000	45000
Total Sulphate as SO_4	%	0.01	3.84	2.18	3.49	4.19	4.55
Total Chloride	mg/kg	5	12000	15000	15000	9200	9700
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	< 0.10	< 0.10	0.16	0.28	0.21
Total Nitrogen (Kjeldahl)	mg/kg	5	420	280	300	330	350
Total Organic Carbon (TOC)	%	0.1	0.9	1.2	2.0	1.5	1.2
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368171	368172	368173	368174	368175
Sample Reference			SS07	SS08	SS09	SS10	SS11
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	5.1	5.0	5.5	4.3	3.6
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	34	24	23	28	20
Iron (aqua regia extractable)	mg/kg	40	30000	23000	20000	25000	18000
Lead (aqua regia extractable)	mg/kg	1	4.1	2.7	2.5	2.9	2.3
Manganese (aqua regia extractable)	mg/kg	1	440	330	250	360	300
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	100	62	57	86	58
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	42	34	30	37	26
Magnesium (aqua regia extractable)	mg/kg	20	35000	25000	28000	33000	26000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	-	-	< 1.0	-	-
Chloroethane	µg/kg	1	-	-	< 1.0	-	-
Bromomethane	µg/kg	1	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	-	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	-	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloromethane	µg/kg	1	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	-	-	< 1.0	-	-
Benzene	µg/kg	1	-	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	-	-	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1	-	-	< 1.0	-	-
Dibromomethane	µg/kg	1	-	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	-	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	-	-	< 1.0	-	-
Toluene	µg/kg	1	-	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	-	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	-	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368171	368172	368173	368174	368175
Sample Reference			SS07	SS08	SS09	SS10	SS11
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	-	-	< 1.0	-	-
p & m-xylene	µg/kg	1	-	-	< 1.0	-	-
Styrene	µg/kg	1	-	-	< 1.0	-	-
Tribromomethane	µg/kg	1	-	-	< 1.0	-	-
o-xylene	µg/kg	1	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	-	-	< 1.0	-	-
Bromobenzene	µg/kg	1	-	-	< 1.0	-	-
N-Propylbenzene	µg/kg	1	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	-	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	-	-	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Butylbenzene	µg/kg	1	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	-	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	-	-	< 1.0	-	-

SVOCs

Aniline	mg/kg	0.1	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Naphthalene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dichlorophenol	mg/kg	0.3	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	-	-	-	-	< 0.1

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368171	368172	368173	368174	368175
Sample Reference			SS07	SS08	SS09	SS10	SS11
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	-	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.1	-	-	-	-	< 0.10
Acenaphthene	mg/kg	0.1	-	-	-	-	< 0.10
2,4-Dinitrotoluene	mg/kg	0.2	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	-	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	-	-	-	-	< 0.2
Fluorene	mg/kg	0.1	-	-	-	-	< 0.10
Azobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	-	-	-	-	< 0.3
Phenanthrene	mg/kg	0.1	-	-	-	-	< 0.10
Anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Carbazole	mg/kg	0.3	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Butyl benzyl phthalate	mg/kg	0.3	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Chrysene	mg/kg	0.05	-	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	-	-	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	-	-	-	-	< 0.05
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368176	368177	368178	368179	368180
Sample Reference			SS12	SS13	SS14	SS15	SS16
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	5.2	4.6	10	6.9	5.3
Asbestos Identification Name	Type	N/A	-	-	-	-	-
Asbestos in Soil Screen	Type	N/A	-	-	-	-	-
General Inorganics							
pH	pH Units	N/A	8.1	8.0	8.2	8.1	7.9
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	21000	45000	30000	35000	40000
Total Sulphate as SO_4	%	0.01	2.12	4.49	3.04	3.54	4.03
Total Chloride	mg/kg	5	11000	11000	17000	16000	15000
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	< 0.10	0.12	0.14	0.19	0.19
Total Nitrogen (Kjeldahl)	mg/kg	5	510	160	380	410	330
Total Organic Carbon (TOC)	%	0.1	1.0	0.7	0.9	1.0	1.2
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368176	368177	368178	368179	368180
Sample Reference			SS12	SS13	SS14	SS15	SS16
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	5.7	4.0	4.2	2.8	3.9
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	19	20	24	26	25
Iron (aqua regia extractable)	mg/kg	40	17000	19000	23000	23000	22000
Lead (aqua regia extractable)	mg/kg	1	2.8	2.4	2.8	1.9	1.6
Manganese (aqua regia extractable)	mg/kg	1	270	310	340	330	310
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	52	67	75	72	66
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	34	28	36	32	31
Magnesium (aqua regia extractable)	mg/kg	20	21000	26000	30000	32000	37000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10
VOCs							
Chloromethane	µg/kg	1	-	< 1.0	-	-	-
Chloroethane	µg/kg	1	-	< 1.0	-	-	-
Bromomethane	µg/kg	1	-	< 1.0	-	-	-
Vinyl Chloride	µg/kg	1	-	< 1.0	-	-	-
Trichlorofluoromethane	µg/kg	1	-	< 1.0	-	-	-
1,1-dichloroethene	µg/kg	1	-	< 1.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	< 1.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	< 1.0	-	-	-
1,1-dichloroethane	µg/kg	1	-	< 1.0	-	-	-
2,2-Dichloropropane	µg/kg	1	-	< 1.0	-	-	-
Trichloromethane	µg/kg	1	-	< 1.0	-	-	-
1,1,1-Trichloroethane	µg/kg	1	-	< 1.0	-	-	-
1,2-dichloroethane	µg/kg	1	-	< 1.0	-	-	-
1,1-Dichloropropene	µg/kg	1	-	< 1.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-	-
Benzene	µg/kg	1	-	< 1.0	-	-	-
Tetrachloromethane	µg/kg	1	-	< 1.0	-	-	-
1,2-dichloropropane	µg/kg	1	-	< 1.0	-	-	-
Trichloroethene	µg/kg	1	-	< 1.0	-	-	-
Dibromomethane	µg/kg	1	-	< 1.0	-	-	-
Bromodichloromethane	µg/kg	1	-	< 1.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-	-
Toluene	µg/kg	1	-	< 1.0	-	-	-
1,1,2-Trichloroethane	µg/kg	1	-	< 1.0	-	-	-
1,3-Dichloropropane	µg/kg	1	-	< 1.0	-	-	-
Dibromochloromethane	µg/kg	1	-	< 1.0	-	-	-
Tetrachloroethene	µg/kg	1	-	< 1.0	-	-	-
1,2-Dibromoethane	µg/kg	1	-	< 1.0	-	-	-
Chlorobenzene	µg/kg	1	-	< 1.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368176	368177	368178	368179	368180
Sample Reference			SS12	SS13	SS14	SS15	SS16
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Ethylbenzene	µg/kg	1	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	-	< 1.0	-	-	-
Styrene	µg/kg	1	-	< 1.0	-	-	-
Tribromomethane	µg/kg	1	-	< 1.0	-	-	-
o-xylene	µg/kg	1	-	< 1.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-	-
Isopropylbenzene	µg/kg	1	-	< 1.0	-	-	-
Bromobenzene	µg/kg	1	-	< 1.0	-	-	-
N-Propylbenzene	µg/kg	1	-	< 1.0	-	-	-
2-Chlorotoluene	µg/kg	1	-	< 1.0	-	-	-
4-Chlorotoluene	µg/kg	1	-	< 1.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-	-
Tert-Butylbenzene	µg/kg	1	-	< 1.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-	-
Sec-Butylbenzene	µg/kg	1	-	< 1.0	-	-	-
1,3-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	-
P-Isopropyltoluene	µg/kg	1	-	< 1.0	-	-	-
1,2-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	-
1,4-dichlorobenzene	µg/kg	1	-	< 1.0	-	-	-
Butylbenzene	µg/kg	1	-	< 1.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	-	< 1.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-	-
Hexachlorobutadiene	µg/kg	1	-	< 1.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-	-

SVOCs

Aniline	mg/kg	0.1	-	-	-	-	-
Phenol	mg/kg	0.2	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	-	-	-	-	-
Isophorone	mg/kg	0.2	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	-	-	-	-	-
Naphthalene	mg/kg	0.1	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	-	-	-	-	-

Analytical Report Number: 14-59242

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Lab Sample Number			368176	368177	368178	368179	368180
Sample Reference			SS12	SS13	SS14	SS15	SS16
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
2-Chloronaphthalene	mg/kg	0.1	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	-	-	-	-	-
Acenaphthylene	mg/kg	0.1	-	-	-	-	-
Acenaphthene	mg/kg	0.1	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	-	-	-	-	-
Fluorene	mg/kg	0.1	-	-	-	-	-
Azobenzene	mg/kg	0.3	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	-	-	-	-	-
Phenanthrene	mg/kg	0.1	-	-	-	-	-
Anthracene	mg/kg	0.1	-	-	-	-	-
Carbazole	mg/kg	0.3	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	-	-	-	-	-
Anthraquinone	mg/kg	0.3	-	-	-	-	-
Fluoranthene	mg/kg	0.1	-	-	-	-	-
Pyrene	mg/kg	0.1	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	-	-	-	-	-
Chrysene	mg/kg	0.05	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	-	-	-	-	-
Radiation							
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

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Project / Site name: WTPS ESIA

Lab Sample Number			368181	368182	368183	368184
Sample Reference			SS17	SS18	SS19	SS20
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**				
Moisture Content	%	N/A	0.24	1.1	1.9	0.72
Asbestos Identification Name	Type	N/A	-	-	-	-
Asbestos in Soil Screen	Type	N/A	Not-detected	-	-	-
General Inorganics						
pH	pH Units	N/A	8.0	8.3	8.1	8.0
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	72000	69000	39000	58000
Total Sulphate as SO_4	%	0.01	7.18	6.91	3.94	5.82
Total Chloride	mg/kg	5	9800	12000	14000	8400
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	0.16	0.13	< 0.10	< 0.10
Total Nitrogen (Kjeldahl)	mg/kg	5	290	280	340	410
Total Organic Carbon (TOC)	%	0.1	1.4	1.5	1.5	2.0
Total Phenols						
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60

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Project / Site name: WTPS ESIA

Lab Sample Number			368181	368182	368183	368184
Sample Reference			SS17	SS18	SS19	SS20
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**				
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	3.8	3.5	3.4	2.9
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	17	15	23	19
Iron (aqua regia extractable)	mg/kg	40	15000	14000	20000	18000
Lead (aqua regia extractable)	mg/kg	1	1.3	1.8	2.4	1.9
Manganese (aqua regia extractable)	mg/kg	1	220	190	300	230
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	45	36	65	51
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	24	21	30	25
Magnesium (aqua regia extractable)	mg/kg	20	33000	25000	26000	36000
Petroleum Hydrocarbons						
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10
VOCs						
Chloromethane	µg/kg	1	-	< 1.0	-	-
Chloroethane	µg/kg	1	-	< 1.0	-	-
Bromomethane	µg/kg	1	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	-	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	-	< 1.0	-	-
Trichloromethane	µg/kg	1	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	-	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	-	< 1.0	-	-
Benzene	µg/kg	1	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	-	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	-	< 1.0	-	-
Trichloroethene	µg/kg	1	-	< 1.0	-	-
Dibromomethane	µg/kg	1	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	-	< 1.0	-	-
Toluene	µg/kg	1	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Lab Sample Number			368181	368182	368183	368184
Sample Reference			SS17	SS18	SS19	SS20
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**				
Ethylbenzene	µg/kg	1	-	< 1.0	-	-
p & m-xylene	µg/kg	1	-	< 1.0	-	-
Styrene	µg/kg	1	-	< 1.0	-	-
Tribromomethane	µg/kg	1	-	< 1.0	-	-
o-xylene	µg/kg	1	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	-	< 1.0	-	-
Bromobenzene	µg/kg	1	-	< 1.0	-	-
N-Propylbenzene	µg/kg	1	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	-	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	-	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	-	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	-	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	-	< 1.0	-	-
Butylbenzene	µg/kg	1	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	-	< 1.0	-	-

SVOCs

Aniline	mg/kg	0.1	-	< 0.1	-	-
Phenol	mg/kg	0.2	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	-	< 0.2	-	-
Isophorone	mg/kg	0.2	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	-	< 0.3	-	-
Naphthalene	mg/kg	0.1	-	< 0.10	-	-
2,4-Dichlorophenol	mg/kg	0.3	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	-	< 0.1	-	-

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Project / Site name: WTPS ESIA

Lab Sample Number			368181	368182	368183	368184
Sample Reference			SS17	SS18	SS19	SS20
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			SURFACE	SURFACE	SURFACE	SURFACE
Date Sampled			11/08/2014	11/08/2014	11/08/2014	11/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**				
2-Chloronaphthalene	mg/kg	0.1	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	-	< 0.1	-	-
Acenaphthylene	mg/kg	0.1	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	-	< 0.10	-	-
2,4-Dinitrotoluene	mg/kg	0.2	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	-	< 0.2	-	-
Fluorene	mg/kg	0.1	-	< 0.10	-	-
Azobenzene	mg/kg	0.3	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	-	< 0.3	-	-
Phenanthrene	mg/kg	0.1	-	< 0.10	-	-
Anthracene	mg/kg	0.1	-	< 0.10	-	-
Carbazole	mg/kg	0.3	-	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	-	< 0.3	-	-
Fluoranthene	mg/kg	0.1	-	< 0.10	-	-
Pyrene	mg/kg	0.1	-	< 0.10	-	-
Butyl benzyl phthalate	mg/kg	0.3	-	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.1	-	< 0.10	-	-
Chrysene	mg/kg	0.05	-	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.1	-	< 0.10	-	-
Benzo(k)fluoranthene	mg/kg	0.1	-	< 0.10	-	-
Benzo(a)pyrene	mg/kg	0.1	-	< 0.10	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	-	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	-	< 0.05	-	-
Radiation						
Radiation screening α+β+γ	µSv/h	0.2	< 0.2	< 0.2	< 0.2	< 0.2

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
368151	BH01	None Supplied	1.0-1.5	Brown clay and sand.
368152	BH01	None Supplied	4.5-5.0	Brown clay.
368153	BH02	None Supplied	3.0-3.5	Brown clay and sand.
368154	BH02	None Supplied	5.5-6.0	Brown clay and sand.
368155	BH03	None Supplied	1.0-1.5	Brown clay and sand.
368156	BH03	None Supplied	2.5-3.0	Light grey clay and sand.
368157	BH04	None Supplied	0.5-1.0	Light brown sand.
368158	BH04	None Supplied	4.0-4.5	Brown clay and sand.
368159	BH05	None Supplied	0.5-1.0	Light brown clay and sand.
368160	BH05	None Supplied	4.0-4.5	Brown clay and sand.
368161	BH06	None Supplied	1.5-2.0	Brown clay and sand.
368162	BH06	None Supplied	5.5-6.0	Brown clay and sand.
368163	BH07	None Supplied	0.5-1.0	Brown clay and sand.
368164	BH07	None Supplied	3.5-4.0	Brown clay and sand.
368165	SS01	None Supplied	SURFACE	Light brown sandy topsoil with gravel.
368166	SS02	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368167	SS03	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368168	SS04	None Supplied	SURFACE	Light brown sandy topsoil with gravel.
368169	SS05	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368170	SS06	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368171	SS07	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368172	SS08	None Supplied	SURFACE	Light brown sandy topsoil with gravel.
368173	SS09	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368174	SS10	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368175	SS11	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368176	SS12	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368177	SS13	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368178	SS14	None Supplied	SURFACE	Brown clay and sand.
368179	SS15	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368180	SS16	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368181	SS17	None Supplied	SURFACE	Brown sandy topsoil with gravel.
368182	SS18	None Supplied	SURFACE	Light brown sandy topsoil with gravel.
368183	SS19	None Supplied	SURFACE	Brown sandy gravel with gravel.
368184	SS20	None Supplied	SURFACE	Light brown sandy topsoil with gravel.

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Project / Site name: WTPS ESIA

Sampling

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Sample type	Sample state (odour, color etc)	Sampling personel	Sampling plan No.	Reference document
368151	BH01	None Supplied	1.0-1.5	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368152	BH01	None Supplied	4.5-5.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368153	BH02	None Supplied	3.0-3.5	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368154	BH02	None Supplied	5.5-6.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368155	BH03	None Supplied	1.0-1.5	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368156	BH03	None Supplied	2.5-3.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368157	BH04	None Supplied	0.5-1.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368158	BH04	None Supplied	4.0-4.5	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368159	BH05	None Supplied	0.5-1.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368160	BH05	None Supplied	4.0-4.5	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368161	BH06	None Supplied	1.5-2.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368162	BH06	None Supplied	5.5-6.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368163	BH07	None Supplied	0.5-1.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368164	BH07	None Supplied	3.5-4.0	13/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368165	SS01	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368166	SS02	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368167	SS03	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368168	SS04	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368169	SS05	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368170	SS06	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368171	SS07	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368172	SS08	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368173	SS09	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368174	SS10	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368175	SS11	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368176	SS12	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368177	SS13	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368178	SS14	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368179	SS15	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368180	SS16	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368181	SS17	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368182	SS18	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368183	SS19	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
368184	SS20	None Supplied	SURFACE	11/08/2014	None Supplied	soil	None Supplied	As specified by the client	As specified by the client	As specified by the client

Uncertainty	10%
Samples were collected and delivered to the laboratory by the client	

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Chloride in soil	Determination of acid soluble chloride in soil by extraction with nitric acid, addition of silver nitrate followed by titration against thiocyanate.	In-house method	L075-PL	D	NONE
Complex cyanide in soil	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	ISO 17025
Kjeldahl nitrogen in soil	Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination.	In house method based on BS 7755-3.7:1995 &	L087-PL	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Radiation Screen	Determined using a Geiger counter.	In-house method		W	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the	In-house method based on British Standard Methods and ISO 17025 requirements.	L019-UK/PL	D	NONE

Analytical Report Number: 14-59242

Project / Site name: WTPS ESIA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPH1 (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method	L064-PL	D	ISO 17025
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	ISO 17025
Water Soluble Phosphate as P in soil	Determination of phosphate in soil by extraction with water then by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L048-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix G3: Sediment Sample Laboratory Analytical Certificates

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Poland

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Analytical Report Number : 14-60552A

Project / Site name:	WTPS ESIA	**Samples received on:**	29/09/2014
Your job number:		**Samples instructed on:**	29/09/2014
Your order number:		**Analysis completed by:**	10-10-2014
Report Issue Number:	1	**Report issued on:**	10-10-2014
Samples Analysed:	5 soil samples		

Dariusz Piotrowski
V-ce Dyrektor ds. Technicznych

Signed:

Dariusz Piotrowski
Technical Manager
For & on behalf of i2 Analytical Ltd.

i2 Analytical Limited Sp. z o.o.
Oddział w Polsce
ul. Pionierów 39
41-711 Ruda Śląska
NIP 2050000762

Agnieszka Pietrowska
Kierownik ds. jakości

Signed:

Agnieszka Pietrowska
Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: Building 19,BRE,Garston, Watford, WD25 9XX

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

Lab Sample Number			376261	376262	376263	376264	376265
Sample Reference			SWO1	SWO2	SWO3	SWO4	SWO5
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Moisture Content	%	N/A	8.8	4.4	43	37	46
General Inorganics							
pH	pH Units	N/A	7.5	8.0	7.9	8.0	7.9
Total Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	1720	1060	4470	4450	5280
Total Sulphate as SO_4	%	0.01	0.172	0.106	0.447	0.445	0.528
Total Chloride	mg/kg	5	2200	1200	10000	11000	9200
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	< 0.10	< 0.10	< 0.10	0.11	0.12
Total Nitrogen (Kjeldahl)	mg/kg	5	1200	270	260	300	340
Total Organic Carbon (TOC)	%	0.1	0.2	0.2	0.6	0.7	0.7
Total Phenols							
Total Phenols (monohydric)	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	1.6	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

Lab Sample Number			376261	376262	376263	376264	376265
Sample Reference			SWO1	SWO2	SWO3	SWO4	SWO5
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**					
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	3.0	4.3	3.4	3.6	2.8
Cadmium (aqua regia extractable)	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Copper (aqua regia extractable)	mg/kg	1	4.4	6.1	24	26	26
Iron (aqua regia extractable)	mg/kg	40	4800	7200	31000	34000	32000
Lead (aqua regia extractable)	mg/kg	1	1.4	2.8	4.4	4.6	3.9
Manganese (aqua regia extractable)	mg/kg	1	100	140	360	400	390
Mercury (aqua regia extractable)	mg/kg	0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	8.6	8.8	81	89	88
Tin (aqua regia extractable)	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	11	12	38	41	40
Magnesium (aqua regia extractable)	mg/kg	20	2800	2600	32000	35000	35000
Petroleum Hydrocarbons							
TPH1 (C10 - C40)	mg/kg	10	< 10	< 10	< 10	< 10	< 10

4041

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
376261	SWO1	None Supplied	None Supplied	Light brown gravelly sand.
376262	SWO2	None Supplied	None Supplied	Light brown gravelly sand.
376263	SWO3	None Supplied	None Supplied	Light grey sandy clay.
376264	SWO4	None Supplied	None Supplied	Light grey sandy clay.
376265	SWO5	None Supplied	None Supplied	Light grey sandy clay.

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

Sampling

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Sample type	Sample state (odour, color etc)	Sampling personel	Sampling plan No.	Reference document
376261	SWO1	None Supplied	None Supplied	13/09/2014	None Supplied	Soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
376262	SWO2	None Supplied	None Supplied	13/09/2014	None Supplied	Soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
376263	SWO3	None Supplied	None Supplied	13/09/2014	None Supplied	Soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
376264	SWO4	None Supplied	None Supplied	13/09/2014	None Supplied	Soil	None Supplied	As specified by the client	As specified by the client	As specified by the client
376265	SWO5	None Supplied	None Supplied	13/09/2014	None Supplied	Soil	None Supplied	As specified by the client	As specified by the client	As specified by the client

Uncertainty	10%

Samples were collected and delivered to the laboratory by the client

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Chloride in soil	Determination of acid soluble chloride in soil by extraction with nitric acid, addition of silver nitrate followed by titration against thiocyanate.	In-house method	L075-PL	D	NONE
Complex cyanide in soil	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	ISO 17025
Kjeldahl nitrogen in soil	Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination.	In house method based on BS 7755-3.7:1995 &	L087-PL	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-UK	D	ISO 17025

Analytical Report Number: 14-60552A

Project / Site name: WTPS ESIA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH1 (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method	L064-PL	D	ISO 17025
Water Soluble Phosphate as P in soil	Determination of phosphate in soil by extraction with water then by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L048-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix H: Chapter 7 Technical Reports

Appendix H1: Groundwater Laboratory Analytical Certificates

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Poland

t: 004832 3426011
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Analytical Report Number : 14-58890

Replaces Analytical Report Number : 14-58890, issue no. 1

Project / Site name:	WTPS ESIA	**Samples received on:**	18/08/2014
Your job number:		**Samples instructed on:**	21/08/2014
Your order number:		**Analysis completed by:**	29-08-2014
Report Issue Number:	2	**Report issued on:**	12/12/2014
Samples Analysed:	7 water samples		

Dariusz Piotrowski
V-ce Dyrektor ds. Technicznych

Signed:

Dariusz Piotrowski
Technical Manager
For & on behalf of i2 Analytical Ltd.

i2 Analytical Limited Sp. z o.o.
Oddział w Polsce
ul. Pionierów 39
41-711 Ruda Śląska
NIP 2050000782

Agnieszka Pietrowska
Kierownik ds. jakości

Signed:

Agnieszka Pietrowska
Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: Building 19,BRE,Garston, Watford, WD25 9XX

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Lab Sample Number			365817	365818	365819	365820
Sample Reference			BH01	BH02	BH03	BH04
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
General Inorganics						
pH	pH Units	N/A	8.0	7.8	7.5	7.8
Electrical Conductivity	µS/cm	10	37000	120000	46000	59000
Salinity	ppt	2	26.2	> 42	33.4	> 42
Total Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	45	1330000	2470000	1220000	3020000
Chloride	mg/l	0.15	11000	45000	24000	20000
Phosphate as PO_4	µg/l	62	< 62	< 62	< 62	< 62
Phosphate as P	µg/l	20	< 20	< 20	< 20	< 20
Ammonia as NH_3	µg/l	15	1400	6000	3300	880
Total Nitrogen (Kjeldahl)	mg/l	0.1	5.3	5.2	5.4	4.2
Nitrate as N	mg/l	0.25	0.5	< 0.3	1.0	0.9
Nitrate as NO_3	mg/l	1.1	2.2	< 1.1	4.6	3.8
Nitrite as N	µg/l	25	< 25	160	540	970
Nitrite as NO_2	µg/l	82	< 82	520	1800	3200
Total Phenols						
Total Phenols (monohydric)	µg/l	10	< 10	< 10	< 10	< 10
Heavy Metals / Metalloids						
Arsenic (dissolved)	µg/l	0.15	1.88	3.57	2.65	3.40
Cadmium (dissolved)	µg/l	0.02	< 0.02	0.23	0.08	< 0.02
Chromium (hexavalent)	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.5	5.5	6.5	3.1	9.5
Iron (dissolved)	mg/l	0.005	0.029	0.067	0.060	0.027
Lead (dissolved)	µg/l	0.2	0.5	1.5	0.6	0.5
Manganese (dissolved)	µg/l	0.05	68	710	360	300
Mercury (dissolved)	µg/l	0.05	< 0.05	< 0.05	1.29	0.73
Nickel (dissolved)	µg/l	0.5	16	18	19	19
Tin (dissolved)	µg/l	0.2	1.2	0.62	< 0.20	< 0.20
Zinc (dissolved)	µg/l	0.5	1.9	3.1	5.7	2.6
Magnesium (dissolved)	mg/l	0.002	370	1700	1100	910
Monoaromatics						
Benzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Total Btex in water	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons						
TPH1 (C10 - C40)	µg/l	10	1120	< 10	< 10	< 10

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Project / Site name: WTPS ESIA

Lab Sample Number			365817	365818	365819	365820
Sample Reference			BH01	BH02	BH03	BH04
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
VOCs						
Chloromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1-dichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichloroethane	µg/l	1	976	990	657	847
1,1-Dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
N-Propylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,3-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
P-Isopropyltoluene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number			365817	365818	365819	365820
Sample Reference			BH01	BH02	BH03	BH04
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
1,4-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs						
Aniline	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	2.0	0.9	< 0.05	0.45
2,6-Dinitrotoluene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05

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Project / Site name: WTPS ESIA

Lab Sample Number			365817	365818	365819	365820
Sample Reference			BH01	BH02	BH03	BH04
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
Anthraquinone	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01

U/S = Unsuitable Sample I/S = Insufficient Sample

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Project / Site name: WTPS ESIA

Lab Sample Number			365821	365822	365823
Sample Reference			BH05	BH06	BH07
Sample Number			None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**			
General Inorganics					
pH	pH Units	N/A	7.9	8.5	8.1
Electrical Conductivity	µS/cm	10	17000	34000	64000
Salinity	ppt	2	11.2	23.9	> 42
Total Cyanide	µg/l	10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	< 10	< 10	< 10
Free Cyanide	µg/l	10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	45	722000	1480000	2080000
Chloride	mg/l	0.15	4100	22000	29000
Phosphate as PO_4	µg/l	62	< 62	< 62	< 62
Phosphate as P	µg/l	20	< 20	< 20	< 20
Ammonia as NH_3	µg/l	15	780	1900	2300
Total Nitrogen (Kjeldahl)	mg/l	0.1	3.6	3.4	3.2
Nitrate as N	mg/l	0.25	0.8	1.2	0.7
Nitrate as NO_3	mg/l	1.1	3.5	5.4	3.1
Nitrite as N	µg/l	25	590	940	820
Nitrite as NO_2	µg/l	82	1900	3100	2700
Total Phenols					
Total Phenols (monohydric)	µg/l	10	< 10	< 10	< 10
Heavy Metals / Metalloids					
Arsenic (dissolved)	µg/l	0.15	1.05	2.07	2.60
Cadmium (dissolved)	µg/l	0.02	< 0.02	0.09	0.10
Chromium (hexavalent)	µg/l	5	< 5.0	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.5	8.2	6.1	7.4
Iron (dissolved)	mg/l	0.005	0.005	0.027	0.022
Lead (dissolved)	µg/l	0.2	0.4	1.3	1.0
Manganese (dissolved)	µg/l	0.05	170	99	520
Mercury (dissolved)	µg/l	0.05	1.32	0.80	< 0.05
Nickel (dissolved)	µg/l	0.5	9.0	18	23
Tin (dissolved)	µg/l	0.2	0.54	0.29	< 0.20
Zinc (dissolved)	µg/l	0.5	2.2	1.6	3.5
Magnesium (dissolved)	mg/l	0.002	200	810	1000
Monoaromatics					
Benzene	µg/l	1	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	< 1.0	< 1.0	< 1.0
Total Btex in water	µg/l	5	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons					
TPH1 (C10 - C40)	µg/l	10	794	42	< 10

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Project / Site name: WTPS ESIA

Lab Sample Number			365821	365822	365823
Sample Reference			BH05	BH06	BH07
Sample Number			None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**			
VOCs					
Chloromethane	µg/l	1	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	< 1.0	< 1.0	< 1.0
1,1-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/l	1	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	< 1.0	< 1.0	< 1.0
1,1-dichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
1,2-dichloroethane	µg/l	1	672	845	638
1,1-Dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	< 1.0	< 1.0	< 1.0
1,2-dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	< 1.0	< 1.0	< 1.0
N-Propylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
1,3-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0
P-Isopropyltoluene	µg/l	1	< 1.0	< 1.0	< 1.0
1,2-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Lab Sample Number			365821	365822	365823
Sample Reference			BH05	BH06	BH07
Sample Number			None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**			
1,4-dichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	< 1.0	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	0.84	0.49	0.2
2-Chloronaphthalene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	0.29	< 0.05	0.17
2,6-Dinitrotoluene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	< 0.05	< 0.05	0.13
4-Nitroaniline	µg/l	0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	< 0.05	< 0.05	< 0.05

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Lab Sample Number			365821	365822	365823
Sample Reference			BH05	BH06	BH07
Sample Number			None Supplied	None Supplied	None Supplied
Depth (m)			None Supplied	None Supplied	None Supplied
Date Sampled			14/08/2014	14/08/2014	14/08/2014
Time Taken			None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**			
Anthraquinone	µg/l	0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	< 0.01	< 0.01	< 0.01

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Sampling

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Sample type	Sample state (odour, color etc)	Sampling personel	Sampling plan No.	Reference document
365817	BH01	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365818	BH02	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365819	BH03	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365820	BH04	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365821	BH05	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365822	BH06	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client
365823	BH07	None Supplied	None Supplied	14/08/2014	None Supplied	water	None Supplied	As specified by the client	As specified by the client	As specified by the client

Uncertainty	10%
Samples were collected and delivered to the laboratory by the client	

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH3 in water	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025
Chloride in water	Determination of Chloride in water by Gallery Discrete Analyser based on reaction with mercury (II) thiocyanate and acid solution with iron (III) nitrate to form a red/brown iron (III) thiocyanate complex; followed by spectrophotometrice measurementat a wavelenght of 480 nm.	Methods for the Examination of Water and Associated Materials Chloride in Waters, Sewage and Effluents 1981.ISBN 0117516260 Accredited matrices: SW, PW, GW.	L082 B	W	ISO 17025
Complex cyanide in water	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Kjeldahl nitrogen in water	Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination.	In house method based on BS 7755-3.7:1995 & ISO 11261:1995.	L087-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L012-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrate in water	Determination of nitrate in water by colorimetric assay. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L078-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L077-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Salinity	Determination of salinity of water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L070-PL	W	NONE

Analytical Report Number: 14-58890

Project / Site name: WTPS ESIA

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate in water	for the Determination of Metals in Soil""	In-house method based on MEWAM 1986 Methods	L039-PL		ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Phosphate in water	Determination of phosphate in water by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by colorimetry.Accredited matrices: SW, PW, GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton, analysis by discreet analyser.	L048-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025

Appendix H2: Surface Water Laboratory Analytical Certificates

David Wells
Earth & Marine Enviromental Consultants
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London

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i2 Analytical Ltd.
ul.Pionierów 39,
41-711 Ruda Slaska,
Poland

t: 004832 3426011
f: 004832 3426012

Analytical Report Number : 14-60552B

Project / Site name:	WTPS ESIA	**Samples received on:**	29/09/2014
Your job number:		**Samples instructed on:**	29/09/2014
Your order number:		**Analysis completed by:**	10-10-2014
Report Issue Number:	1	**Report issued on:**	10-10-2014
Samples Analysed:	10 water samples		

Dariusz Piotrowski
V-ce Dyrektor ds. Technicznych

Signed:

Dariusz Piotrowski
Technical Manager
For & on behalf of i2 Analytical Ltd.

i2 Analytical Limited Sp. z o.o.
Oddział w Polsce
ul. Pionierów 39
41-711 Ruda Śląska
NIP 2050000762

Agnieszka Pietrowska
Kierownik ds. jakości

Signed:

Agnieszka Pietrowska
Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: Building 19,BRE,Garston, Watford, WD25 9XX

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-60552B

Project / Site name: WTPS ESIA

Lab Sample Number			376266	376267	376268	376269
Sample Reference			SWO1	SWO1	SWO2	SWO2
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0	12.7	1.0	13.3
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
General Inorganics						
pH	pH Units	N/A	7.8	7.9	7.9	7.9
Electrical Conductivity	µS/cm	10	59000	50000	56000	52000
Salinity	ppt	2	> 42	36.7	41.7	38.4
Total Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	45	3850000	3810000	4950000	4510000
Chloride	mg/l	0.15	17000	16000	15000	15000
Phosphate as PO_4	µg/l	62	< 62	62	< 62	< 62
Phosphate as P	µg/l	20	< 20	20	< 20	< 20
Total Nitrogen (Kjeldahl)	mg/l	0.1	7.3	5.3	4.6	2.9
Nitrate as N	mg/l	0.25	< 0.3	< 0.3	0.4	< 0.3
Nitrate as NO_3	mg/l	1.1	< 1.1	< 1.1	1.9	< 1.1
Nitrite as N	µg/l	25	< 25	< 25	< 25	< 25
Nitrite as NO_2	µg/l	82	< 82	< 82	< 82	< 82
Total Phenols						
Total Phenols (monohydric)	µg/l	10	< 10	< 10	< 10	< 10
Speciated PAHs						
Naphthalene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH						
Total EPA-16 PAHs	µg/l	0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-60552B

Project / Site name: WTPS ESIA

Lab Sample Number			376266	376267	376268	376269
Sample Reference			SWO1	SWO1	SWO2	SWO2
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0	12.7	1.0	13.3
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
Heavy Metals / Metalloids						
Arsenic (dissolved)	µg/l	0.15	5.04	4.69	4.45	3.70
Cadmium (dissolved)	µg/l	0.02	0.02	0.02	0.05	< 0.02
Chromium (hexavalent)	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.5	15	18	14	19
Iron (dissolved)	mg/l	0.005	0.021	0.020	0.019	0.016
Lead (dissolved)	µg/l	0.2	0.9	0.8	0.7	0.7
Manganese (dissolved)	µg/l	0.05	0.75	0.81	0.36	0.31
Mercury (dissolved)	µg/l	0.05	1.45	1.30	1.28	1.16
Nickel (dissolved)	µg/l	0.5	3.7	3.8	4.9	4.5
Tin (dissolved)	µg/l	0.2	0.60	< 0.20	< 0.20	< 0.20
Zinc (dissolved)	µg/l	0.5	4.5	5.2	3.2	4.0
Magnesium (dissolved)	mg/l	0.002	1700	1700	1800	1700
Petroleum Hydrocarbons						
TPH1 (C10 - C40)	µg/l	10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 14-60552B

Project / Site name: WTPS ESIA

Lab Sample Number			376270	376271	376272	376273
Sample Reference			SWO3	SWO3	SWO4	SWO4
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0	15.1	1.0	10.0
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
General Inorganics						
pH	pH Units	N/A	7.9	7.9	7.9	7.9
Electrical Conductivity	µS/cm	10	74000	57000	63000	65000
Salinity	ppt	2	> 42	> 42	> 42	> 42
Total Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	< 10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	45	3940000	4090000	4950000	5020000
Chloride	mg/l	0.15	17000	16000	11000	16000
Phosphate as PO_4	µg/l	62	< 62	< 62	< 62	< 62
Phosphate as P	µg/l	20	< 20	< 20	< 20	< 20
Total Nitrogen (Kjeldahl)	mg/l	0.1	2.3	1.8	1.7	1.4
Nitrate as N	mg/l	0.25	< 0.3	< 0.3	0.3	< 0.3
Nitrate as NO_3	mg/l	1.1	< 1.1	< 1.1	1.2	< 1.1
Nitrite as N	µg/l	25	< 25	< 25	< 25	< 25
Nitrite as NO_2	µg/l	82	< 82	< 82	< 82	< 82
Total Phenols						
Total Phenols (monohydric)	µg/l	10	< 10	< 10	< 10	< 10
Speciated PAHs						
Naphthalene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH						
Total EPA-16 PAHs	µg/l	0.2	< 0.2	< 0.2	< 0.2	< 0.2

Analytical Report Number: 14-60552B

Project / Site name: WTPS ESIA

Lab Sample Number			376270	376271	376272	376273
Sample Reference			SWO3	SWO3	SWO4	SWO4
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			1.0	15.1	1.0	10.0
Date Sampled			13/09/2014	13/09/2014	13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**				
Heavy Metals / Metalloids						
Arsenic (dissolved)	µg/l	0.15	4.57	3.42	4.39	3.35
Cadmium (dissolved)	µg/l	0.02	< 0.02	0.02	< 0.02	0.03
Chromium (hexavalent)	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.5	11	12	13	11
Iron (dissolved)	mg/l	0.005	0.021	0.015	0.019	0.018
Lead (dissolved)	µg/l	0.2	0.7	0.6	0.7	0.7
Manganese (dissolved)	µg/l	0.05	1.0	0.58	0.94	1.3
Mercury (dissolved)	µg/l	0.05	1.15	1.18	1.05	1.09
Nickel (dissolved)	µg/l	0.5	3.9	2.9	4.6	3.6
Tin (dissolved)	µg/l	0.2	< 0.20	< 0.20	< 0.20	< 0.20
Zinc (dissolved)	µg/l	0.5	4.8	3.2	3.1	3.4
Magnesium (dissolved)	mg/l	0.002	1800	1800	1700	1800
Petroleum Hydrocarbons						
TPH1 (C10 - C40)	µg/l	10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

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Lab Sample Number			376274	376275
Sample Reference			SWO5	SWO5
Sample Number			None Supplied	None Supplied
Depth (m)			1.0	11.0
Date Sampled			13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**		
General Inorganics				
pH	pH Units	N/A	7.8	7.9
Electrical Conductivity	µS/cm	10	68000	53000
Salinity	ppt	2	> 42	39.2
Total Cyanide	µg/l	10	< 10	< 10
Complex Cyanide	µg/l	10	< 10	< 10
Free Cyanide	µg/l	10	< 10	< 10
Sulphate as SO_4	µg/l	45	4810000	4670000
Chloride	mg/l	0.15	17000	15000
Phosphate as PO_4	µg/l	62	< 62	< 62
Phosphate as P	µg/l	20	< 20	< 20
Total Nitrogen (Kjeldahl)	mg/l	0.1	1.5	1.8
Nitrate as N	mg/l	0.25	< 0.3	< 0.3
Nitrate as NO_3	mg/l	1.1	< 1.1	< 1.1
Nitrite as N	µg/l	25	< 25	< 25
Nitrite as NO_2	µg/l	82	< 82	< 82
Total Phenols				
Total Phenols (monohydric)	µg/l	10	< 10	< 10
Speciated PAHs				
Naphthalene	µg/l	0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	< 0.01	< 0.01
Total PAH				
Total EPA-16 PAHs	µg/l	0.2	< 0.2	< 0.2

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Lab Sample Number			376274	376275
Sample Reference			SWO5	SWO5
Sample Number			None Supplied	None Supplied
Depth (m)			1.0	11.0
Date Sampled			13/09/2014	13/09/2014
Time Taken			None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**		
Heavy Metals / Metalloids				
Arsenic (dissolved)	µg/l	0.15	5.00	4.71
Cadmium (dissolved)	µg/l	0.02	< 0.02	< 0.02
Chromium (hexavalent)	µg/l	5	< 5.0	< 5.0
Copper (dissolved)	µg/l	0.5	19	19
Iron (dissolved)	mg/l	0.005	0.020	0.026
Lead (dissolved)	µg/l	0.2	5.9	0.5
Manganese (dissolved)	µg/l	0.05	1.3	1.2
Mercury (dissolved)	µg/l	0.05	1.02	1.03
Nickel (dissolved)	µg/l	0.5	4.9	4.2
Tin (dissolved)	µg/l	0.2	< 0.20	< 0.20
Zinc (dissolved)	µg/l	0.5	13	8.0
Magnesium (dissolved)	mg/l	0.002	1800	1700
Petroleum Hydrocarbons				
TPH1 (C10 - C40)	µg/l	10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

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Sampling

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Date Sampled	Time Taken	Sample type	Sample state (odour, color etc)	Sampling personel	Sampling plan No.	Reference document
376266	SWO1	None Supplied	1.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376267	SWO1	None Supplied	12.7	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376268	SWO2	None Supplied	1.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376269	SWO2	None Supplied	13.3	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376270	SWO3	None Supplied	1.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376271	SWO3	None Supplied	15.1	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376272	SWO4	None Supplied	1.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376273	SWO4	None Supplied	10.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376274	SWO5	None Supplied	1.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client
376275	SWO5	None Supplied	11.0	13/09/2014	None Supplied	Water	None Supplied	As specified by the client	As specified by the client	As specified by the client

Uncertainty	10%

Samples were collected and delivered to the laboratory by the client

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride in water	Determination of Chloride in water by Gallery Discrete Analyser based on reaction with mercury (II) thiocyanate and acid solution with iron (III) nitrate to form a red/brown iron (III) thiocyanate complex; followed by spectrophotometrice measurementat a wavelenght of 480 nm.	Methods for the Examination of Water and Associated Materials Chloride in Waters, Sewage and Effluents 1981.ISBN 0117516260 Accredited matrices: SW, PW, GW.	L082 B	W	ISO 17025
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-UK	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Kjeldahl nitrogen in water	Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination.	In house method based on BS 7755-3.7:1995 & ISO 11261:1995.	L087-PL	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L012-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrate in water	Determination of nitrate in water by colorimetric assay. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L078-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L077-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Salinity	Determination of salinity of water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate in water	for the Determination of Metals in Soil""	In-house method based on MEWAM 1986 Methods	L039-PL		ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025

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Project / Site name: WTPS ESIA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Phosphate in water	Determination of phosphate in water by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by colorimetry.Accredited matrices: SW, PW, GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton, analysis by discreet analyser.	L048-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.