Minutes of Meeting

Meeting:	**Altona Properties Soil & Groundwater Meeting**	Location:	**St. Joseph's College Board Room, Altona**
Recorded by:	Kate Dowsley/ Melanie Rowe	Date:	30 August 2004 5pm
Reference:	2130458A_003_MIN02A ROWEM		
Present:	Noel Ryan, Peter Horne (Orica), Nessie Hardy (Resident), Melanie Rowe (PB), Kate Dowsley (PB)		
Apologies:	Valerie Gemmell (Resident) Vincent Bonnici (City West Water) Dave Adams (PB) Richard Marks (EPA)		

Item No.	Item	Action
1	**Confirmation of Agenda** - Agenda confirmed as stated.	
2	**Minutes of Last Meeting** - Minutes of last meeting (March 2004) were circulated previously. Minutes of last meeting were accepted as true and correct.	
3	**Groundwater Treatment Update** - PB presented a summary of groundwater treatment and monitoring over the past 6 months since the last community meeting. An updated timeline (attached) was presented detailing system operation and shutdowns. In that period the Groundwater Treatment System (GWTS) commonly had problems related to high temperatures in the quench and wastewater pipeline blockages. The root cause of these problems was identified as being related to the poor water quality causing blockage of various components within the system. A scheduled shutdown occurred in July for maintenance of the system and replacement of service water pipework. After a few initial problems in re-starting the GWTS (SVE only) it is now running reliably. Operation of the air sparge component is awaiting resolution of some remaining maintenance issues. PB presented a number of graphs (attached) showing cumulative volatile chlorinated hydrocarbons (VCH) (as 1,2 dichloroethane (EDC)) extracted by the treatment system, cumulative resources used and waste produced and cumulative environmental impacts measure. It was also requested that a graph presenting system uptime (uptime graph to end July 2004 attached) is presented as part of the community meetings in future. Aim to operate at >80% reliability. Nessie Hardy questioned how long the GWTS would be required to continue running. Noel Ryan advised that ongoing assessment of the treatment effectiveness was required against the associated environmental impacts of operating the system in terms of consumption of resources (for example of water and caustic), production of greenhouse gases etc. The final endpoint for remediation would require community and EPA approval. However the question of when all contaminants would be extracted or treated was more difficult. Noel quoted a study conducted in the US which predicted that complete attenuation of a VCH plume in ideal conditions would take 600 years. Nessie expressed concern that PolyOne would disown its commitment to groundwater remediation before the best possible outcome had been achieved. Noel pointed out that it is in PolyOne's best interests to remediate to the extent required to maximise opportunities for future use and development of the site, and associated resale value. Peter Horne also commented that if PolyOne withdraws support for the ongoing remediation, responsibility will fall to Orica as PolyOne's operating partner in Australia.	PB – GWTS Uptime graph to be presented at future meetings

Item No.	Item	Action
	VCH emissions to wastewater and air continue to be monitored on a regular basis and comply with the EPA waste discharge license (WDL) and Trade Waste Agreement (TWA).	
4	**Groundwater Treatment System Shutdown and Maintenance** - A scheduled maintenance shutdown occurred from 26 July to 17 August 2004. The shutdown was part of the new preventative maintenance program for both electrical and mechanical components of the system which was developed as part of the reliability study. It is hoped that by conducted more regular preventative maintenance the frequency of unscheduled shutdowns will be reduced. During the shutdown the corroded service water and wastewater pipes were replaced with stainless steel pipes and a filtration system to minimise ongoing issues with blockages and scaling of the system.	
5	**Proposed Change to GWTS Operation – Scrubber pH** - Due to recent problems with high pH of waste water and associated difficulty complying with the Trade Waste Agreement, PB propose to conduct a trial operation at reduce scrubber operating pH of 9.0 (currently pH10). In addition based on the expected variability in operating pH above and below the set point a trial will also be run at a pH of 8.0 to ensure compliance with EPA WDL limits. The trial would run over a period of up to one week and has received in principle approval from the EPA. The many benefits of operating at a reduce pH are detailed on the attached overhead presented at the meeting. A review of system documentation found that there is no specification with regards to the setpoint of pH10, rather that optimal operational pH is between approximately pH 8.5 and pH10. Nessie queried whether lower scrubber pH (due to lower caustic volume added) would be sufficient to treat all hydrochloric acid (HCl) entering the scrubber, or would it allow untreated HCl to escape to the atmosphere. Noel suggested that this would not be a problem, as even at a lower pH, caustic would still be in excess and therefore all HCl would be treated in the stack. Emissions testing will be conducted as part of the trial to ensure that the EPA WDL limits with regards to HCl are being met at the reduced scrubber pH conditions. The trial will be conducted following final approval of the workplan by EPA and once the GWTS is operating at steady state conditions. It is expected that the trial will be run in the next couple of months.	PB – Finalise workplan with EPA
6	**6 Monthly Groundwater Monitoring May 2004** - PB conducted groundwater monitoring of 14 wells in May 2004, with analysis for vinyl chloride and 1,2-Dichloroethane only. Contour maps of groundwater flow, VCM and EDC concentrations were presented (attached). Results were generally consistent with historic data, although slightly higher EDC concentration in several wells was reported and has been attributed to a change in primary laboratories back to ALS. BH3G which had previously been damaged during site demolition was reinstated and sampled as part of the May 2004 GME. BH1G which could not be sampled in May due to an obstruction was subsequently cleared and sampled on 27 August. An anomalous result was noted for BH8QR so this was also resampled on 27 August. DO and redox were indicative of natural attenuation in some areas.	PB – Annual Groundwater monitoring of all wells due in November 2004
7	**Off-site Groundwater Monitoring on Former Qenos Land** - SCT have acquired and begun development of the land to the south of APPL. They have granted site access to PB to allow continued monitoring of existing wells on their property. One well (BH16AVQP) had to be decommissioned due to the construction of a road on the site, however it is hoped that no more will be lost.	

Item No.	Item	Action
8	**EPA Annual Report** - The EPA annual report was submitted as required in July 2004. All license requirements with respect to emissions, sampling and groundwater treatment have been met.	
9	**Proposed Soil Investigation** - A further soil investigation has been proposed to assess the extent of primary sources remaining at the site and has received in principle support from the EPA. PB presented a site map showing locations of former soil investigations and the current proposed locations. The investigation will target the former tar storage area and the former EDC plant and storage tanks. It is proposed to use an excavator to dig testpits and trenches in order to expose the clay/basalt interface to enable visual assessment of impacts as well as laboratory analysis. Issues including exposure of contaminants to workers as well as off-site emissions and odours will have to be managed. Noel said that exposure would be short-term and less than the recommended limits however concentrations of contaminants in air will be monitored continuously using a PID during site works. Workers on-site will also wear respirators. If exceedances to the recommended limits are noted the hole will be closed immediately and work will be stopped. Works will commence following final approval of the workplan by EPA. It is expected that works will commence in the next couple of months.	PB – Finalise workplan with EPA
10	**Groundwater Management Plan Website** - The GWMP website was updated following the last community meeting in March and will also be updated after the current meeting.	PB – Website to be updated
11	**General Discussion and Questions** - Nessie expressed concern about potential odours arising from the proposed soil investigation. Noel reiterated that air monitoring will be conducted on-site and works will stop if odours are detected. The distance of residents houses from the site, along with monitoring should prevent any odours reaching residential properties. However the Action Line will also be notified of the works so that resident complaints are dealt with quickly. Peter Horne said that Orica is still undergoing processes to re-zone the site, in order to obtain a higher resale value. Preliminary results from site assessment works as part of the Audit of the North title are positive and it is hoped that the Audit will be finalised in the coming months.	
12	**Next Meeting** - The next regular meeting was scheduled to be in six months – March 2005.	
	Meeting closed at 7 pm.	

GWTS Operational Timeline
March - August 2004

March 2004

- Various ongoing maintenance and reliability issues related to water quality and pipwork issues
  - Quench High Temperature and wastewater pipeline blockages
- GWTS Reliability Study Completed maintnenace issues prioritised and preventative maintenance program developed
- Maintenace issues prioritised and Preventative Maintenance Program developed
- Intermittent Operation

April 2004

- Ongoing shutdown and Investigation of Quench high temperature
- Combustion Air Blower failure
- No system operation

May 2004

- Repeated Combustion Air Blower Failure
- Resolution of Quench High Temperature Issues (Spray Nozzle Blockage)
- Approval for pipework replacement and Filtration system
- GWTS Operation 17 - 31 May
- EPA WDL 6 monthly Emission Testing conducted
- Air Sparge Trial Conducted on Non-operational Wells
- 26 - 27 six-monthly groundwater monitoring undertaken

June 2004

- GWTS Operating Reliability @ 72%
- Shutdown 16 - 24 Quench High Temperature (Spray nozzle blockage) and PLC issues
- Preparation of EPA WDL Annual Report

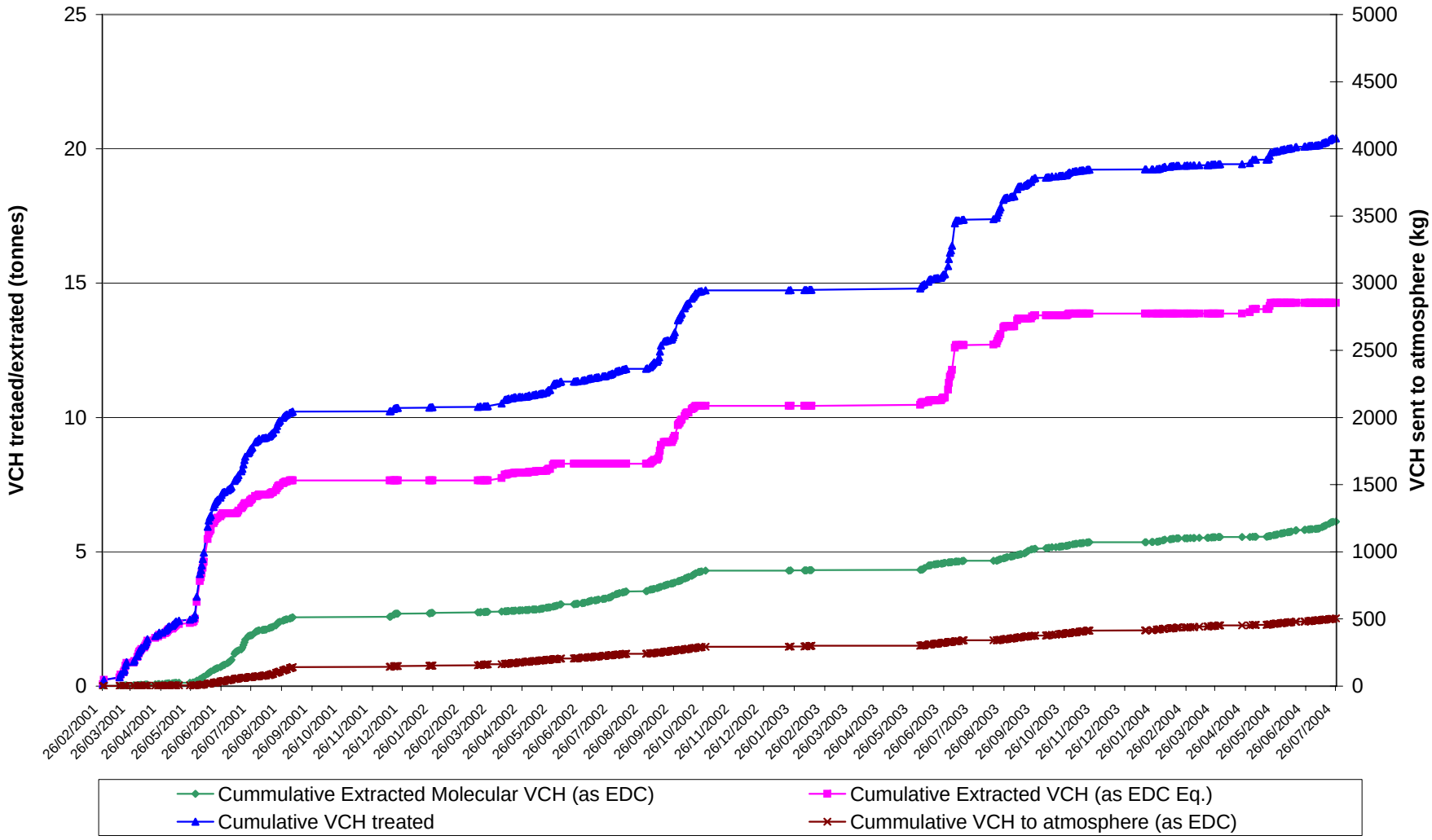
July 2004

- GWTS Operation Reliability @ 84%
- Scheduled Shutdown on 26 July
- Full mechanical and electrical preventative maintenance
- Replacement of water supply pipework
- Installation of Filtering System

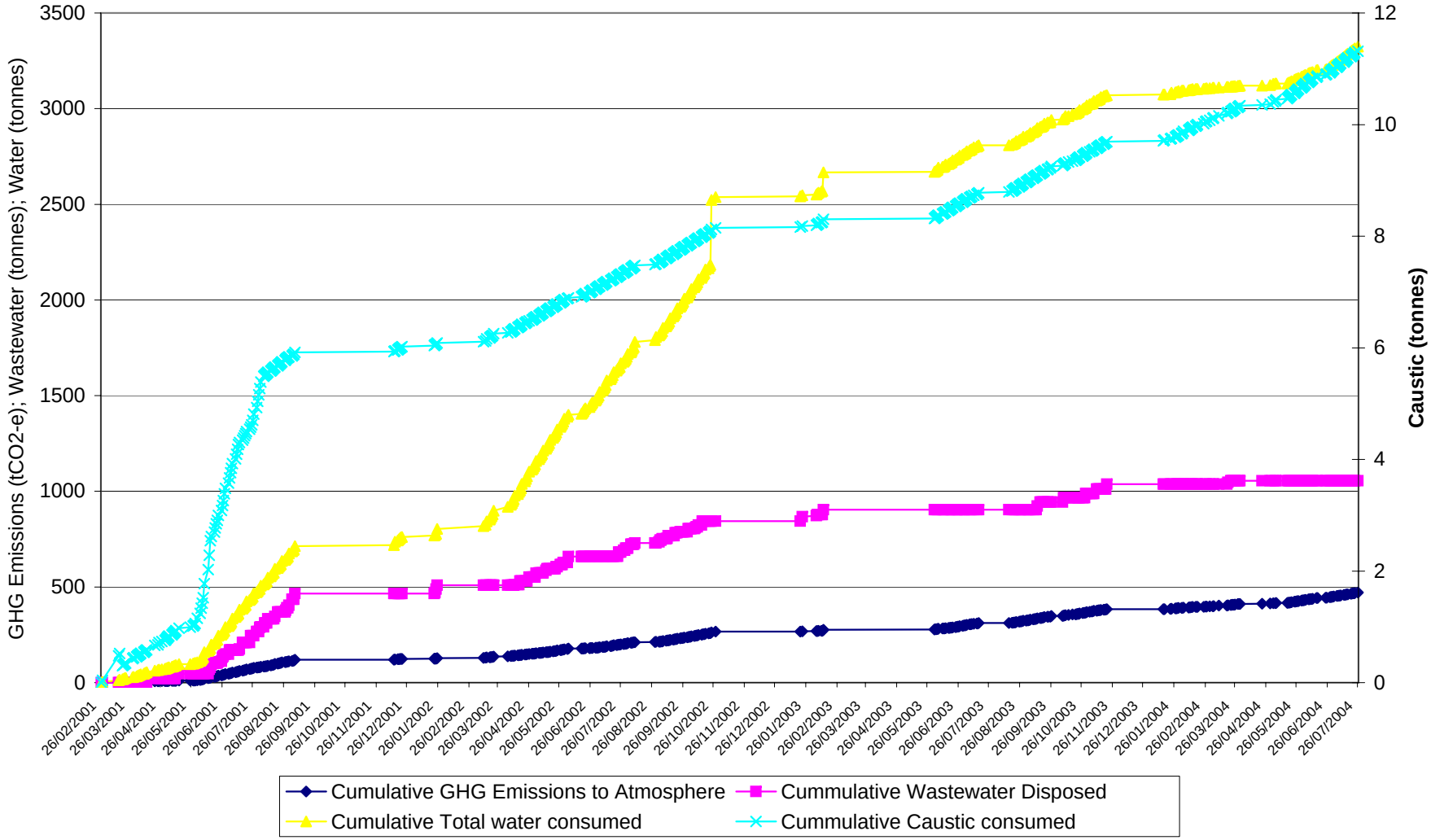
August 2004

- Scheduled Maintenance Shutdown
- SVE start up on 17 August
- 22 Combustiuon Blower Fail
- 24 SVE Restart

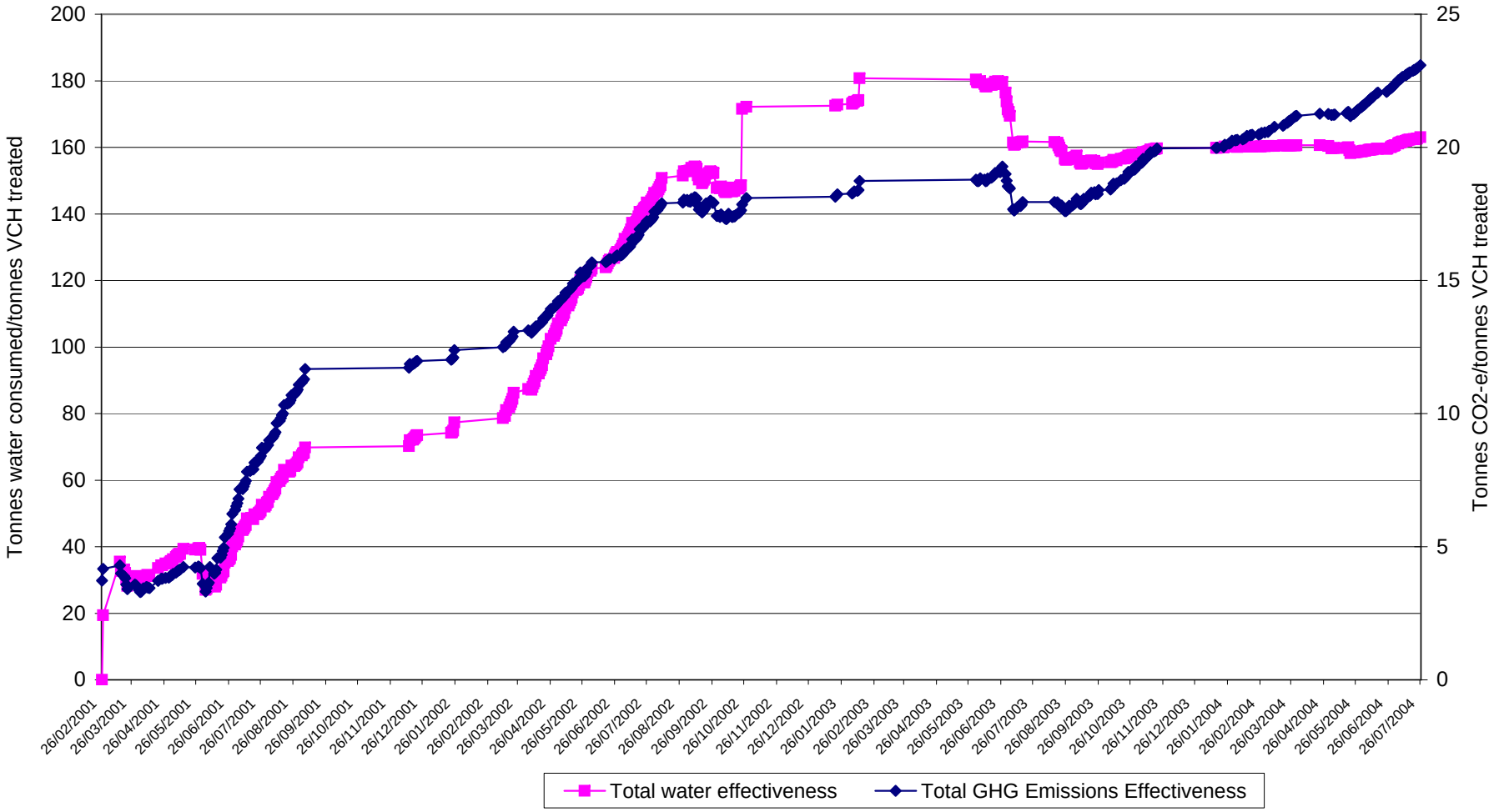
VCH (as EDC) Extracted and Sent to Atmosphere based on PID readings (Cummulative Performance)



Resources Consumed & Wastes Produced (Cummulative Performance)

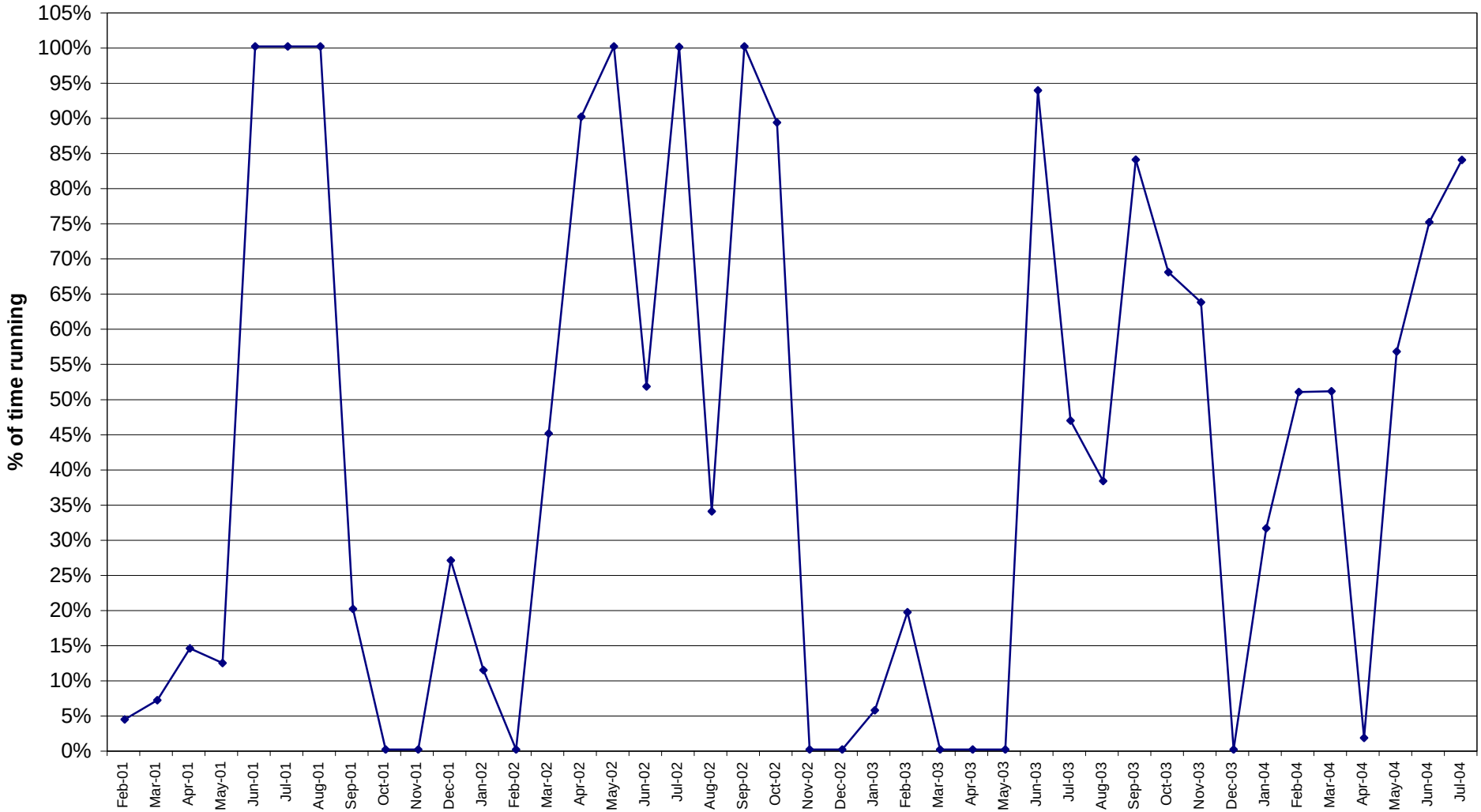


Environmental Performance Measures



GWTF Operating Time Performance

Values of 0% indicate the plant did not operate in that month

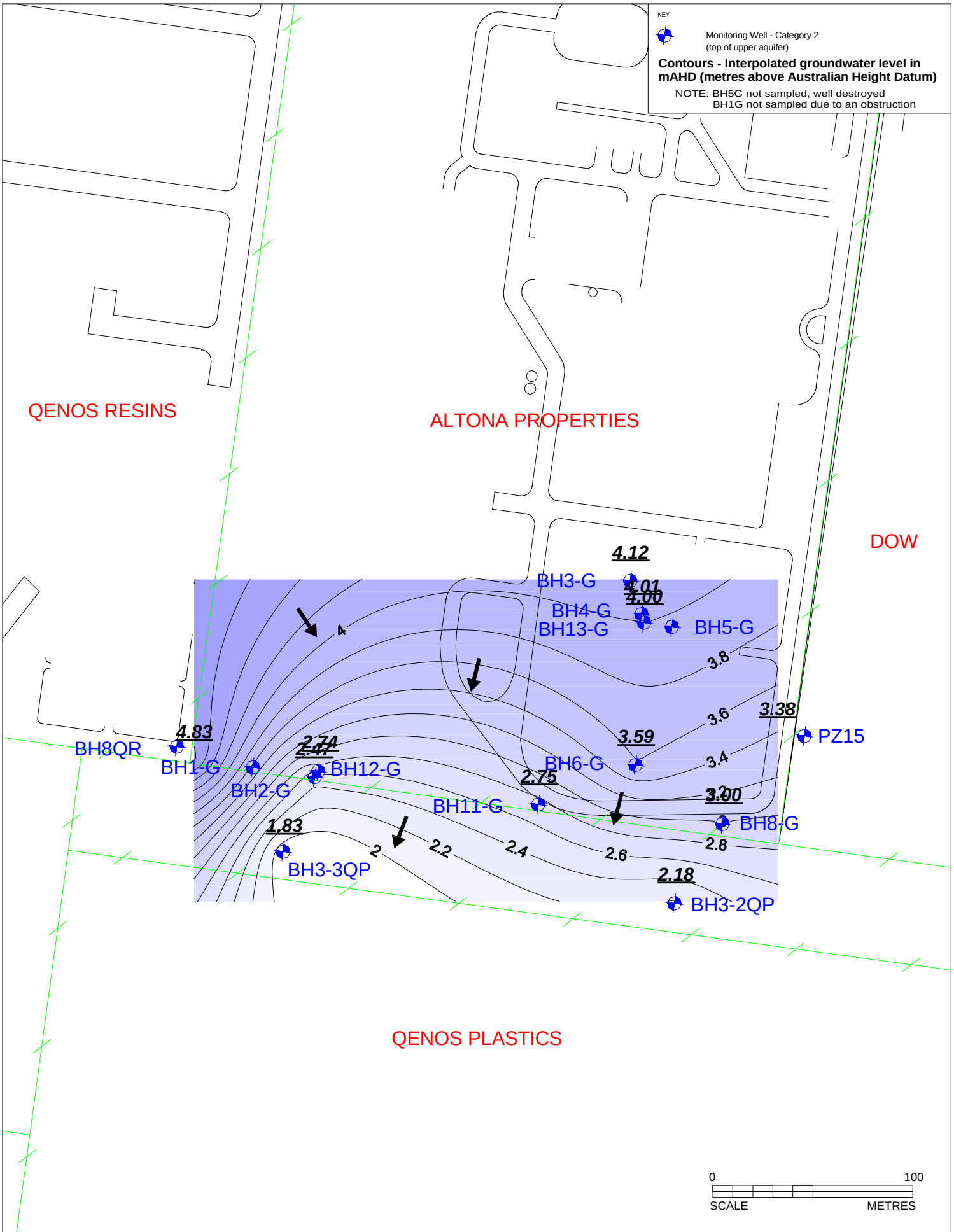


Proposed Scrubber pH Trial

- GWTS Scrubber Operation – pH 10.0
- GWTS TWA Limit for pH – 10.0
- Difficulties with ensuring wastewater meets TWA limits
- Costly off-site disposal
- OH&S Issues
- High pH of scrubber leads to scale problems
- Proposal to trial lower operating pH
- Workplan provided to EPA for approval
- Trial will include emission testing for HCl and wastewater testing
- Reduced Scrubber operating pH will provide many benefits
    - Ensure TWA limits met to allow disposal to sewer
    - Ensure ongoing compliance with EPA WDL
    - Reduced TDS of wastewater to sewer
    - Reduced scaling problems in scrubber
    - Reduced OH&S issues for GWTS operators
    - Reduced caustic consumption
    - Reduced caustic disposed to sewer

Summary of May 2004 Six Monthly, Altona Properties

- Sampling and Analysis of 14 wells from across APPL, Qenos and Dow sites
- Analysis for 1,2-Dichloroethane and Vinyl Chloride only
- Groundwater flow was in a south- southwesterly direction, consistent with previous monitoring
- Reverted back to using ALS as the primary laboratory due to problems with analysis and sample turn-around experienced at Amdel. The increased cost of analysis at ALS was offset by limiting analysis to EDC and VCM for the 6 monthly monitoring.
- Overall May 2004 data generally within historic ranges.
- Slightly higher EDC concentrations reported at some location attributed to change in primary laboratory.
- Elevated EDC Concentration reported for well BH8QR. Resampling conducted and awaiting results.
- Well BH1G not sampled due to obstruction, subsequently redeveloped and sampled, awaiting results.
- Well BH3G which had previously been damaged during site demolition was reinstated prior to the May 2004 GME and was sampled.
- DO and redox indicative of natural attenuation in some areas.



DESIGNED		DATE	APPROVED: JT	DATE: 11/03	Altona Properties Kororoit Creek Road, Altona Interpolated Groundwater Contours (mAHD) Category 2 Wells, Top of Upper Aquifer 6 Monthly Groundwater Monitoring May 2004
DESIGN CHECK			CAD REFERENCE: D03a2130474A_swl.SRF		
DRAWN: KD	11/03		NOTE: adapted from FLUOR DANIEL GTI Plan		
DRAWING CHECK: MR	11/03		SCALE: As Indicated		

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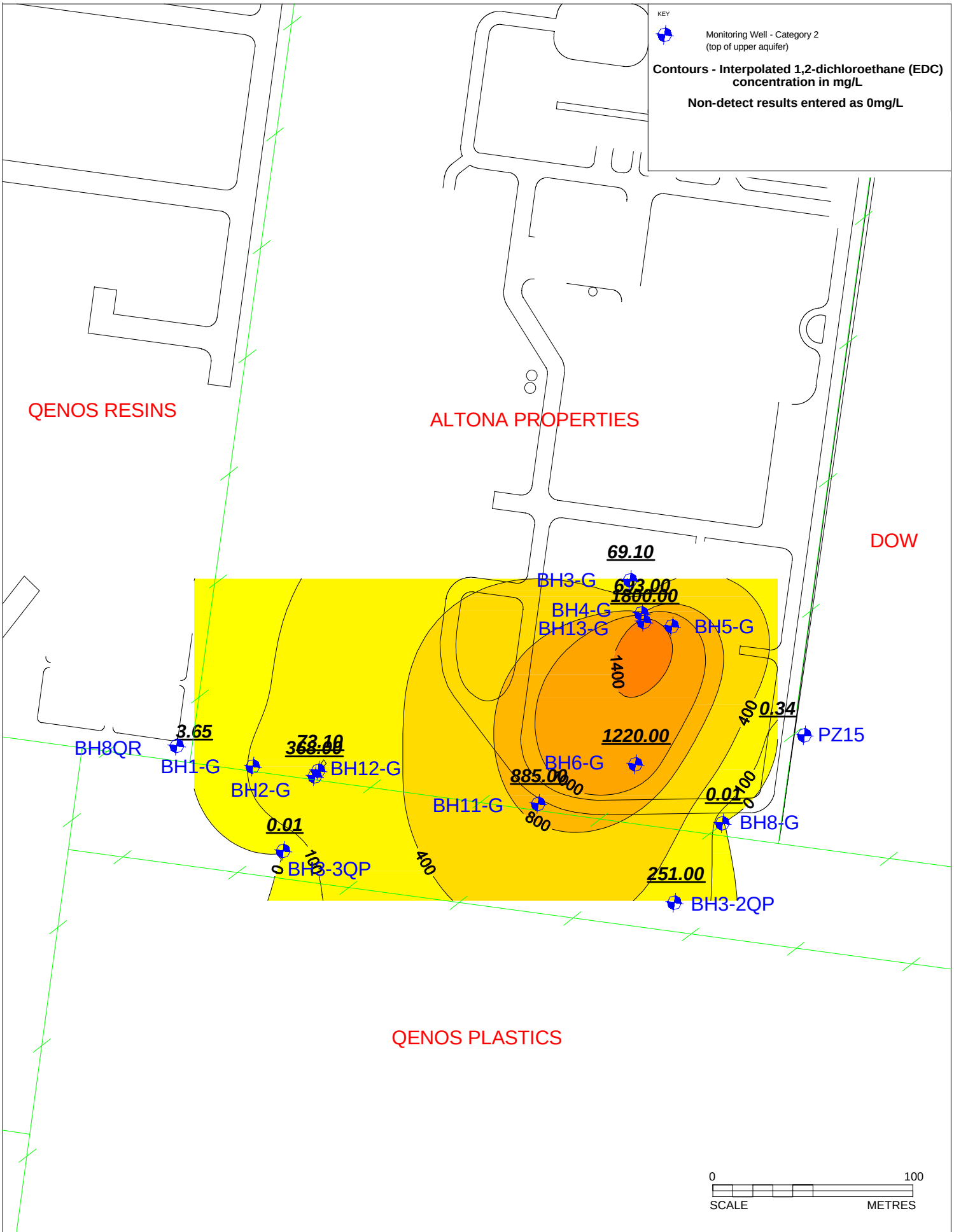
Job Number	Drawing Number	Revision
2130474A	Figure 3	A



	DESIGNED	DATE	APPROVED: JT	DATE: 11/03	Altona Properties Kororoit Creek Road, Altona Interpolated Groundwater EDC Concentration Category 2 Wells, Top of Upper Aquifer 6 Monthly Groundwater Monitoring May 2004
	DESIGN CHECK		CAD REFERENCE: D04a2130474A_edc.SRF		
	DRAWN: KD	11/03	NOTE: adapted from FLUOR DANIEL GTI Plan		
	DRAWING CHECK: MR	11/03	SCALE: As Indicated		

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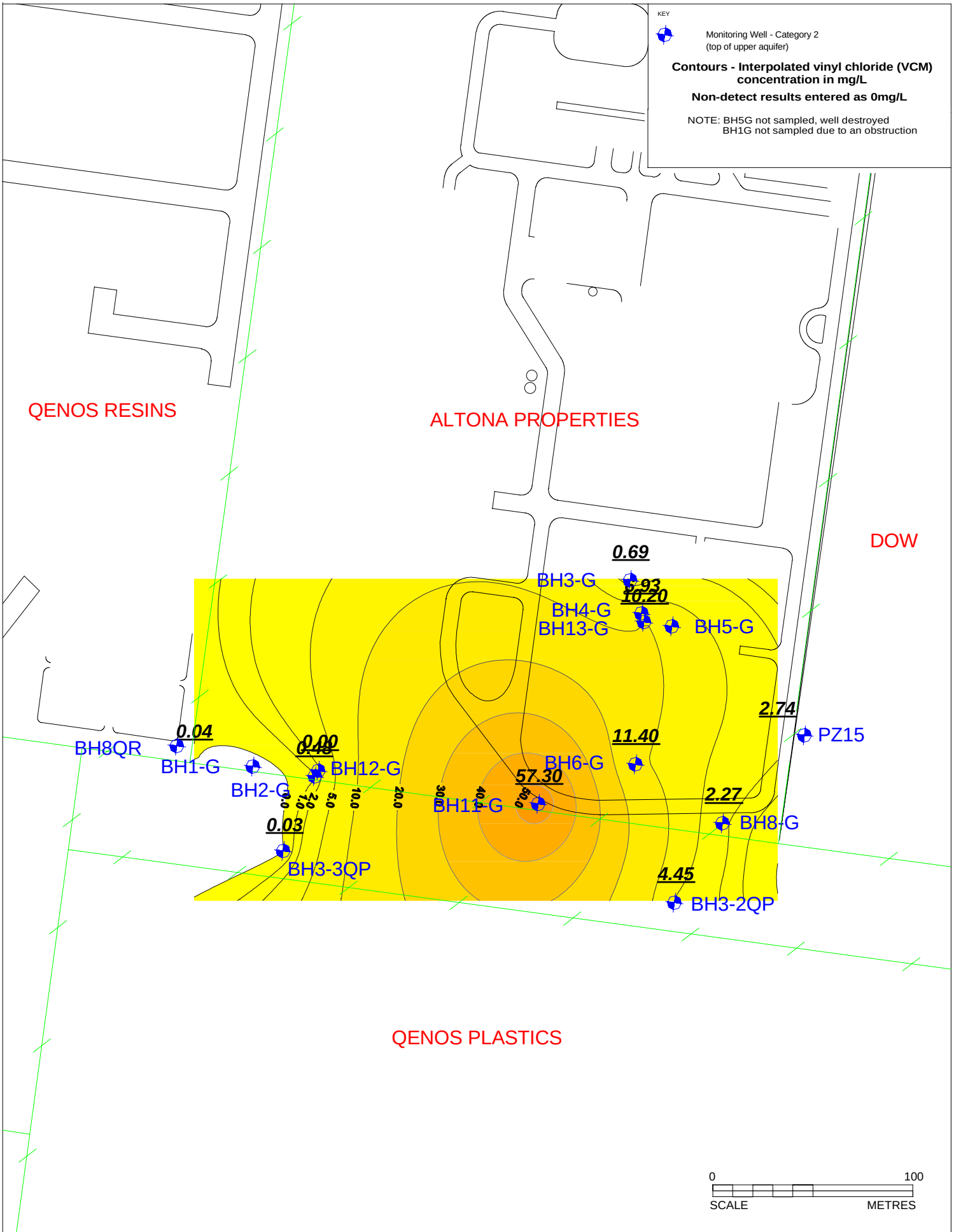
Job Number	Drawing Number	Revision
2130474A	Figure 4	A



DESIGNED		DATE	APPROVED JT	DATE 11/03	Altona Properties Kororoit Creek Road, Altona Interpolated Groundwater VCM Concentration Category 2 Wells, Top of Upper Aquifer 6 Monthly Groundwater Monitoring May 2004
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DRAWN	KD	11/03	NOTE: adapted from FLUOR DANIEL GTI Plan		
DRAWING CHECK	MR	11/03	SCALE As Indicated		

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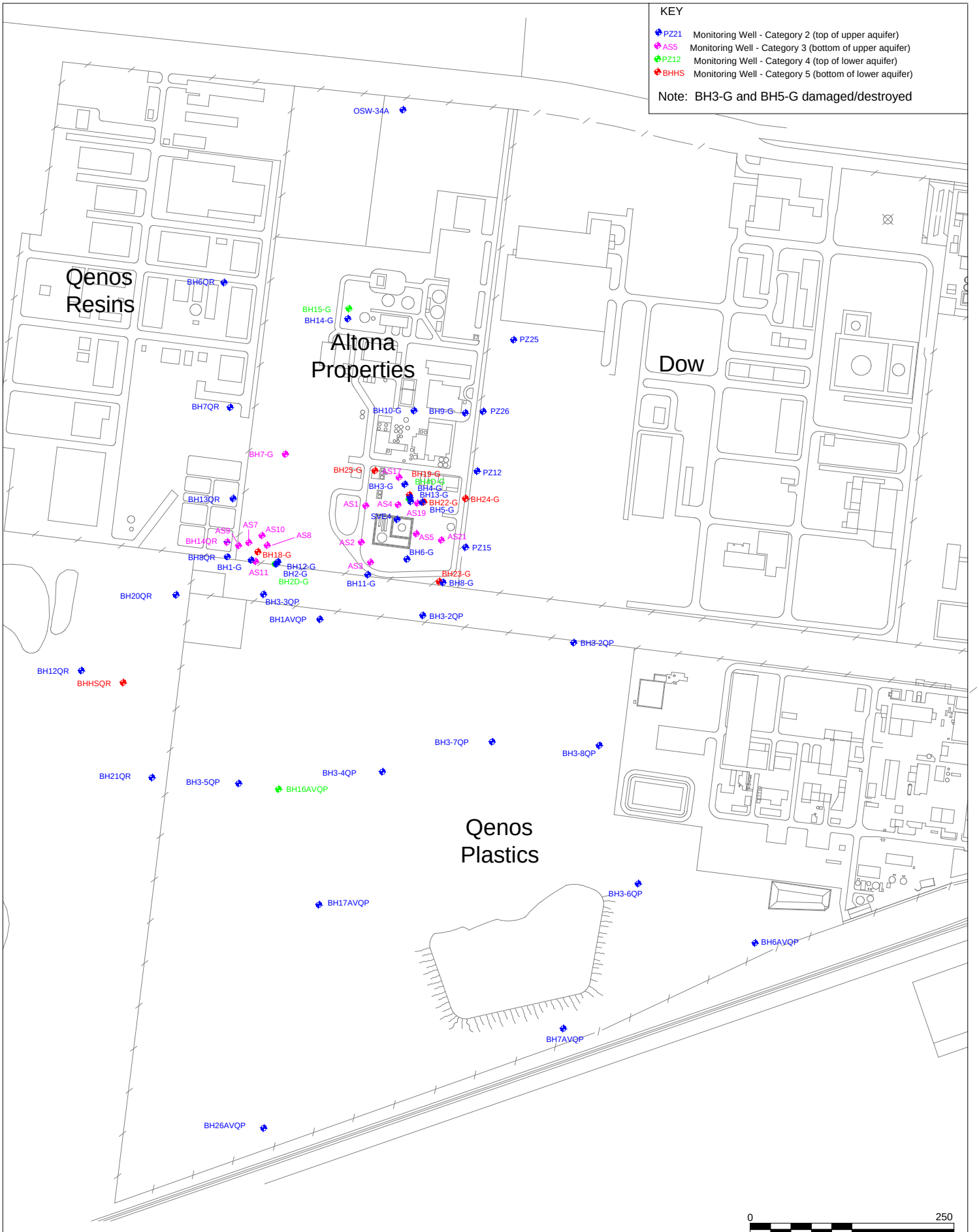
Job Number	Drawing Number	Revision
2130474A	Figure 6	A



Source of Base Map - Qenos Pty Ltd by approval

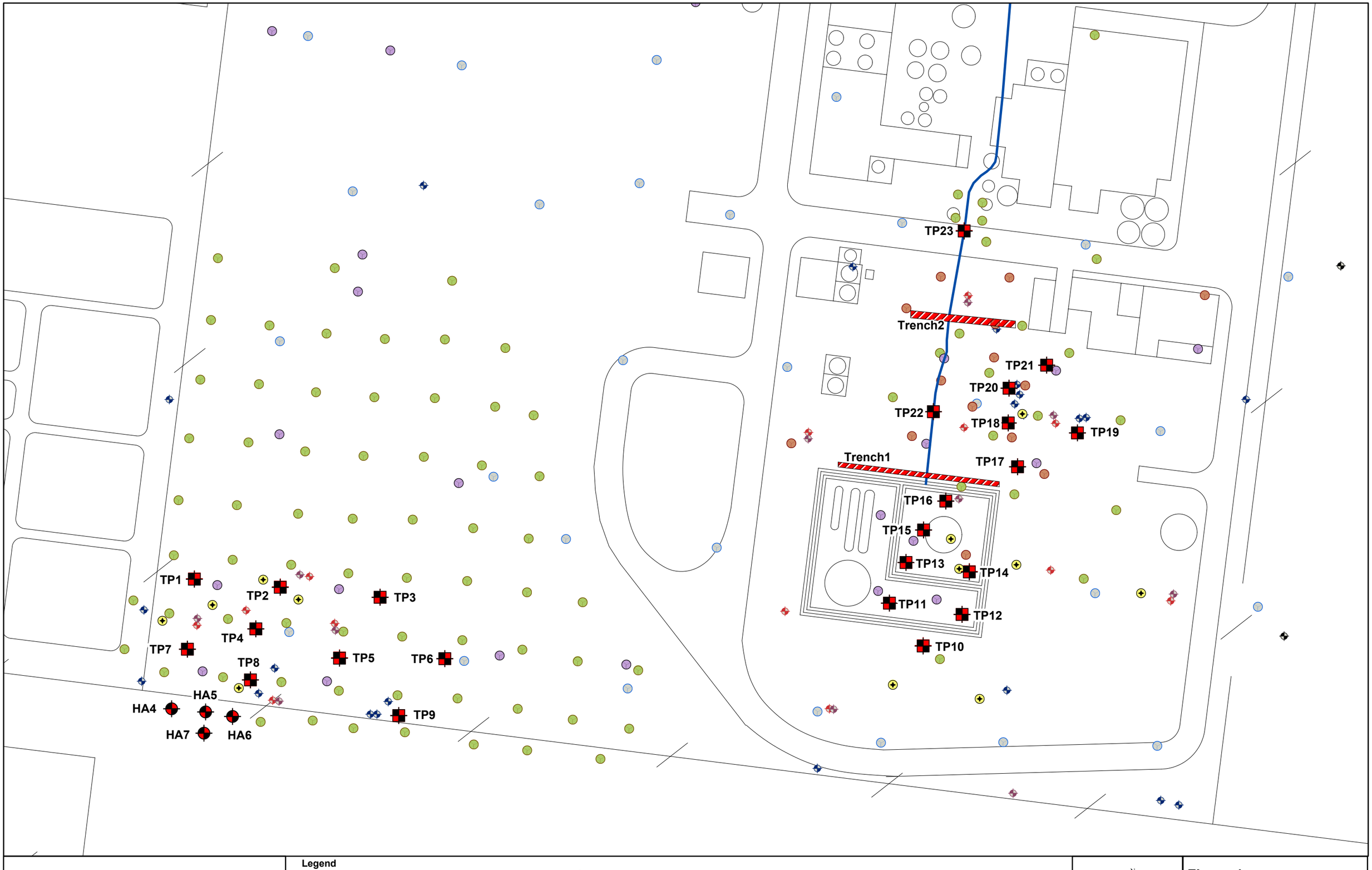
DESIGNED		APPROVED: JT	DATE: 16/04/04	Altona Properties Kororoit Creek Road Well Locations Annual Groundwater Monitoring November 2003
DESIGN CHECK		BASEMAP: 2130430a_DRW002b		
DRAWN: KD	16/04/04			
DRAWING CHECK: MR	16/04/04	SCALE: AS SHOWN		

PARSONS BRINCKERHOFF

Job Number	Drawing Number	Revision
2130430A	Figure 2	B

Proposed Soil Investigation

- Objectives
  - assess the extent of the previously identified impacts in the former tar storage area
  - investigate the former EDC plant/EDC storage tanks for potential "source" zones with regard to groundwater impacts
  - assess the odour and vapour impacts during the works that may affect odour and vapour controls during any larger scale excavation/remediation works in the future
  - assess remedial options and remedial techniques that may now be available in Australia
- Target areas based on historical activities, i.e. former tar storage area, former EDC storage tank bund, former VCM plant etc
- Sampling methodology
  - Excavation of testpits and trenches
  - Expose clay/ basalt interface
  - Sampling and laboratory analysis for contaminants of concern (VCHs, SVCHs, TPH, BTEX, PAHs, Phenols)
- Environmental & OH&S Issues
  - Job Safety Analysis and Health and Safety Plan
  - Personnel Protective Equipment (PPE)
  - Air monitoring – breathing space (carbon tubes) and continuous PID monitoring to ensure that site workers are not exposed to unacceptable concentrations of soil contaminants using "real-time" measurements and monitor for explosive risk
  - Continuous air monitoring with a PID downwind of site works
  - May be some odour issues
  - Options to extract vapours from excavations using SVE system
  - Excavations to be immediately backfilled to reduce odours, also use of plastic sheeting or odour suppressants as applicable



PARSONS BRINCKERHOFF

Legend

- Air Sparge Well
- Groundwater Monitoring Well
- Groundwater Monitorin Well
- Soil Vapour Extraction Well
- CMPS&F 1997 Soil Bore
- PPK 1998 Soil Bore
- 1999 Diamond Core
- 1992 Soil Bore
- 1995 Soil Bore
- Pipeline
- Proposed Hand Auger Location August 2004
- Proposed Testpit Location August 2004
- Proposed Trench Location August 2004

N

0 10 20 Meters

PB Reference:
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Figure 1
Proposed Soil Investigation August 2004 Revised Sampling Plan