THIRD FIVE YEAR REVIEW REPORT
OSBORNE LANDFILL SUPERFUND SITE
PINE TOWNSHIP, MERCER COUNTY, PENNSYLVANIA

U S Environmental Protection Agency Region 3
1650 Arch Street
Philadelphia, PA 19103

September 8, 2010

Approved by

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Hazardous Sites Cleanup Division
U S EPA Region 3

Date

9/8/10

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
1 1 DCA	1 1 dichloroethane
1 2 4 TCB	1 2 4 trichlorobenzene
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant or Appropriate Requirements
BTAG	Biological Technical Assessment Group
CEC	Civil Environmental Consultants
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
cis 1 2 DCE	cis 1 2 dichloroethene
COA	Consent Order and Agreement
COC	contaminants of concern
Cooper	Cooper Industries Inc
ESD	Explanation of Significant Differences
FS	Feasibility Study
HGL	HydroGeoLogic Inc
IC	Institutional Controls
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MWV	mine void well
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NPL	National Priorities List
O&M	operation and maintenance
OU	Operable Unit
PADEP	Pennsylvania Department of Environmental Protection
PADER	Pennsylvania Department of Environmental Resources
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyls
PCOR	Preliminary Closeout Report
PRP	potentially responsible party
RA	Remedial Action

from leaving the Site minimize migration of contaminants to groundwater and surface waters and prevent direct contact with or ingestion of contaminants

The following issues and recommendations were identified during the five year review process

1) Surface drainage from the western side of the surface of the landfill discharges to a swale that runs along the base of the landfill and ultimately discharges to a portion of the wetland directly adjacent to the road The wetland mitigation area adjacent to the western boundary of the Site does not appear to be performing as anticipated and it appears that there is insufficient water to adequately hydrate the area

Recommendation pertaining to Issue #1

Simple modifications should be made to the drainage swale to facilitate moving the water from the site cap and swale to the mitigation wetland and specifically the area of the intended wetland that is not adequately saturated Mowing of the area adjacent to the stream that runs along eastern/northeastern side of the Site (adjacent to the treatment building) should be modified to allow more of a buffer Mowing should not be performed within 10 feet of the top of the slope along this drainage feature

2) The groundwater data indicate that VC contamination is still present at levels above its performance standard in some of the mine void wells and one residential well that are part of OU2 The residential well is no longer in use and the residents utilize a public water supply

Recommendation pertaining to Issue #2

Monitoring of volatile organic contaminants (VOCs) in the groundwater in OU2 will continue until the performance standards are achieved The PRP has implemented an optimization study to speed the natural attenuation of VC in these wells The U S EPA will continue to evaluate the data and recommend any changes based on the optimization study for OU2 groundwater

3) Minor areas of settling were noted at multiple locations along the western and southern portions of the cap In no case did the settling result in surface elevation decrease of more than 3 inches relative to the adjacent surface Areas along the eastern and western portions of the cap were soggy possibly indicating that the drainage layer had been overloaded by the heavy snow and rain that had occurred over the perceeding months

Recommendations pertaining to Issue #3

These areas of settling should be monitored to determine whether there is active settling that could affect the cap The soggy areas should be monitored over the coming months to determine if the problem is transient or represents a long term drainage issue that needs to be addressed Ongoing monitoring of the cap should be implemented as part of the operation and maintenance (O&M) of the Site

Protectiveness Statement(s)

OU1

Based on currently available data the remedies constructed for OU1 appear to be protective of human health and the environment The constructed remedies for OU1—the landfill leachate collection system the landfill cap and slurry wall groundwater monitoring and the ICs—are functioning as intended The remedies prevent contamination from leaving the site minimize migration of contaminants to groundwater and surface water and prevent direct contact with or ingestion of contaminants ICs in place for OU1 include all necessary ICs for the entire site

OU2

Based on currently available data the remedies in place for OU2 appear to be protective of human health and the environment Natural attenuation with groundwater monitoring was selected as the remedy Additionally the ICs in place as part of OU1 prevent the use of the contaminated groundwater as a drinking water supply Recent analytical results indicate that performance standards have been achieved for all but three mine void wells and one residential well and an optimization plan has been approved by the U S EPA and implemented by the PRP to speed the natural attenuation of contaminants at the Site A vapor intrusion investigation was conducted near the residence of concern and vapor intrusion was ruled out as a concern for the Site given the current conditions

Overall Protectiveness

Based on currently available data the remedies constructed for the Site remain protective of human health and the environment in the short and long terms The remedies are functioning as intended and no exposure pathways appear to exist

RAO	Remedial Action Objectives
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SVOC	semivolatile organic compound
TBC	to be considered
TCE	trichloroethene
TCL	target compound list
the site	Osborne Landfill Superfund Site
THM	trihalomethane
trans 1 2 DCE	trans 1 2 dichloroethene
U S EPA	U S Environmental Protection Agency
UAO	Unilateral Administrative Order
USFWS	U S Fish and Wildlife Service
VC	vinyl chloride
VOC	volatile organic contaminants

EXECUTIVE SUMMARY

The Osborne Landfill Site (the Site) is located in Pine Township Mercer County Pennsylvania The first Record of Decision (ROD)1 for the Site dated September 28 1990 addressed the solid waste fill material (Operable Unit [OU]1) and the on site water table (OU3) Under ROD1 a slurry wall and clay cap were constructed extraction wells were installed to collect and treat leachate institutional controls (ICs) were established and groundwater monitoring was required The second ROD (ROD2) dated December 30 1997 addressed the wetland sediments (OU2) and all Site groundwater (OU4 Clarion Formation and OU5 Homewood Formation) ROD2 included a no action decision for the wetlands Natural attenuation with monitoring was selected for the contaminated Clarion Aquifer with groundwater monitoring selected for the deeper uncontaminated aquifers at the Site

Currently OU2 is defined as groundwater in those portions of the Clarion Aquifer (including certain residential wells and mine void wells in the Brookville coal) the Homewood Aquifer and Connoquenessing and Burgoon Aquifers located near the Site but outside of the fill area OU1 currently refers to the waste material and groundwater in contact with the waste material

The trigger for this five year review is the signature date of the second five year review September 8 2005

At the time of the last five year review the potentially responsible party (PRP) for the Site had recently shut down the treatment systems following results of rebound tests and U S Environmental Protection Agency (U S EPA) approval Since that time routine sampling has occurred on a yearly or semiannual basis to monitor the protectiveness of the remedy As shown by the data most of the contaminants of concern have been reduced to levels below their respective maximum contaminant levels (MCLs) However vinyl chloride (VC) continues to be an issue in two of the performance wells (one screened in the Clarion Formation and one screened in the Homewood Formation) three of the mine void wells ([MWV] 3 MWV 5 and MWV 9) and one residential well The residential well is connected to public water and not using the groundwater in the residential well for drinking water purpose The PRP has presented an optimization plan in an attempt to speed the decline of VC concentrations in the mine void wells and residential well The optimization plan was presented to the U S EPA in June 2009 and it was revised in September 2009 in accordance with U S EPA comments The PRP has initiated the preliminary activities for the Optimization Plan

The remedial actions constructed for this site remain protective of human health and the environment The constructed remedies are functioning as intended and there do not appear to be any current exposure pathways The vapor intrusion pathway has been investigated for the home of concern and the results showed that there was no concern for the vapor intrusion pathway The remedies include the landfill leachate collection system the landfill cap and slurry wall a fence surrounding the Site groundwater monitoring and institutional controls that are in place and include prohibitions on the use or disturbance of groundwater until cleanup levels are achieved Additionally Pine Township Ordinance No 5 requires all property owners within 150 feet of the public water supply to connect to the public water main The prohibitions on new

wells within the property containing the landfill continue to achieve the Remedial Action Objectives (RAOs) for the Site These remedies prevent groundwater and soil contamination from leaving the Site minimize migration of contaminants to groundwater and surface waters and prevent direct contact with or ingestion of contaminants

The following issues and recommendations were identified during the five year review process

1) Surface drainage from the western side of the surface of the landfill discharges to a swale that runs along the base of the landfill and ultimately discharges to a portion of the wetland directly adjacent to the road The wetland mitigation area adjacent to the western boundary of the Site does not appear to be performing as anticipated and it appears that there is insufficient water to adequately hydrate the area

Recommendation pertaining to Issue #1

Simple modifications should be made to the drainage swale to facilitate moving the water from the site cap and swale to the mitigation wetland and specifically the area of the intended wetland that is not adequately saturated Mowing of the area adjacent to the stream that runs along eastern/northeastern side of the Site (adjacent to the treatment building) should be modified to allow more of a buffer Mowing should not be performed within 10 feet of the top of the slope along this drainage feature

2) The groundwater data indicate that VC contamination is still present at levels above its performance standard in some of the mine void wells and one residential well that are part of OU2 The residential well is no longer in use and the residents utilize a public water supply

Recommendation pertaining to Issue #2

Monitoring of volatile organic contaminants (VOCs) in the groundwater in OU2 will continue until the performance standards are achieved The PRP has implemented an optimization study to speed the natural attenuation of VC in these wells The U S EPA will continue to evaluate the data and recommend any changes based on the optimization study for OU2 groundwater

3) Minor areas of settling were noted at multiple locations along the western and southern portions of the cap In no case did the settling result in surface elevation decrease of more than 3 inches relative to the adjacent surface Areas along the eastern and western portions of the cap were soggy possibly indicating that the drainage layer had been overloaded by the heavy snow and rain that had occurred over the perceeding months

Recommendations pertaining to Issue #3

These areas of settling should be monitored to determine whether there is active settling that could affect the cap The soggy areas should be monitored over the coming months to determine if the problem is transient or represents a long term drainage issue that needs to be addressed Ongoing monitoring of the cap should be implemented as part of the operation and maintenance (O&M) of the Site

Protectiveness Statement(s)

OU1

Based on currently available data the remedies constructed for OU1 appear to be protective of human health and the environment The constructed remedies for OU1—the landfill leachate collection system the landfill cap and slurry wall groundwater monitoring and the ICs—are functioning as intended The remedies prevent contamination from leaving the site minimize migration of contaminants to groundwater and surface water and prevent direct contact with or ingestion of contaminants ICs in place for OU1 include all necessary ICs for the entire site

OU2

Based on currently available data the remedies in place for OU2 appear to be protective of human health and the environment Natural attenuation with groundwater monitoring was selected as the remedy Additionally the ICs in place as part of OU1 prevent the use of the contaminated groundwater as a drinking water supply Recent analytical results indicate that performance standards have been achieved for all but three mine void wells and one residential well and an optimization plan has been approved by the U S EPA and implemented by the PRP to speed the natural attenuation of contaminants at the Site A vapor intrusion investigation was conducted near the residence of concern and vapor intrusion was ruled out as a concern for the Site given the current conditions

Overall Protectiveness

Based on currently available data the remedies constructed for the Site remain protective of human health and the environment in the short and long terms The remedies are functioning as intended and no exposure pathways appear to exist

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FIVE YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site name (from WasteLAN) Osborne Landfill		
U S EPA ID (from WasteLAN) PAD980712673		
Region 3	State PA	City/County Grove City/Mercer County
SITE STATUS		
NPL status ☒ Final ☐ Deleted ☐ Other (specify)		
Remediation status (choose all that apply) ☐ Under Construction ☒ Operating ☒ Complete		
Multiple OUs?* ☒ Yes ☐ No	Construction completion date 9/21/1998	
Has Site been put into reuse? ☐ Yes ☒ No		
REVIEW STATUS		
Lead agency ☒ U S EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name Rashmi Mathur		
Author title Remedial Project Manager	Author affiliation U S EPA Region 3	
Review period ** 03/05/10 to 8/30/10		
Date(s) of Site inspection December 3 2009 and March 25 2010		
Type of review ☒ Post SARA ☐ Pre SARA ☐ NPL Removal only ☐ Non NPL Remedial Action Site ☐ NPL State/Tribe lead ☐ Regional Discretion		
Review number ☐ 1 (first) ☐ 2 (second) ☒ 3 (third) ☐ Other (specify)		
Triggering action ☐ Actual RA On Site Construction at OU#____ ☐ Actual RA Start at OU#____ ☐ Construction Completion ☒ Previous Five Year Review Report ☐ Other (specify)		
Triggering action date (from WasteLAN) 9/08/2005		
Due date (five years after triggering action date) 9/08/2010		

* OU refers to operable unit

** Review period should correspond to the actual start and end dates of the Five Year Review in WasteLAN

FIVE YEAR REVIEW SUMMARY FORM (continued)

Issues

1) Surface drainage from the western side of the surface of the landfill discharges to a swale that runs along the base of the landfill and ultimately discharges to a portion of the wetland directly adjacent to the road The wetland mitigation area adjacent to the western boundary of the Site does not appear to be performing as anticipated and it appears that there is insufficient water to adequately hydrate the area

2) The groundwater data indicate that VC contamination is still detected above its performance standard in some of the mine void wells and one residential well that are part of OU2

3) Minor areas of settling were noted at multiple locations along the western and southern portions of the cap In no case did the settling result in surface elevation decrease of more than 3 inches relative to the adjacent surface Areas along the eastern and western portions of the cap were soggy possibly indicating that the drainage layer has been overloaded by the heavy snow and rain that had occurred over the preceding months

Recommendations and Follow up Actions

Recommendation pertaining to Issue #1
Simple modifications should be made to the drainage swale to facilitate moving the water from the site cap and swale to the mitigation wetland and specifically the area of the intended wetland that is not adequately saturated Mowing of the area adjacent to the stream that runs along eastern/northeastern side of the Site (adjacent to the treatment building) should be modified to allow more of a buffer Mowing should not be performed within 10 feet of the top of the slope along this drainage feature

Recommendation pertaining to Issue #2
Monitoring of VOCs in the groundwater in OU2 will continue until the performance standards are achieved The PRP has implemented an optimization study to speed the natural attenuation of VC in these wells The U S EPA will continue to evaluate the data and recommend any changes based on the optimization plan for OU2 groundwater If the optimization plan is successful the U S EPA will issue a decision document

Recommendations pertaining to Issue #3
These areas of settling should be monitored to determine whether there is active settling that could affect the cap The soggy areas should be monitored over the coming months to determine if the problem is transient or represents a long term drainage issue that needs to be addressed Ongoing monitoring of the cap should be implemented as part of the operation and maintenance (O&M) of the Site

FIVE YEAR REVIEW SUMMARY FORM (continued)

Protectiveness Statement(s)

OU1

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OU2

Based on currently available data the remedies in place for OU2 appear to be protective of human health and the environment Natural attenuation with groundwater monitoring of VOCs was selected as the remedy Additionally ICs in place as part of OU1 prevent the use of the contaminated groundwater as a drinking water supply Recent analytical results indicate that performance standards have been achieved for all but three mine void wells and one residential well and an optimization plan has been approved by the U S EPA and implemented by the PRP to speed the natural attenuation of contaminants at the Site A vapor intrusion investigation was conducted near the residence of concern and vapor intrusion was ruled out as a concern for the Site given the current conditions

Overall Protectiveness

Based on currently available data the remedies constructed for the Site remain protective of human health and the environment in the short and long terms The remedies are functioning as intended and no exposure pathways appear to exist

GPRA Measure Review
As part of this Five Year Review the GPRA Measure have also been reviewed The GPRA Measures and their status are provided as follows

Environmental Indicators
Human Health Current Human Exposure Controlled and Protective Remedy in Place
Groundwater Migration Contaminated Ground Water Migration Under Control

Sitewide RAU The Site is currently not Site Wide Ready for Anticipated Use (SWRAU) but is expected to achieve SWRAU shortly after the completion of this Five Year Review

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THIRD FIVE YEAR REVIEW REPORT
OSBORNE LANDFILL SUPERFUND SITE
PINE TOWNSHIP, MERCER COUNTY, PENNSYLVANIA

1 0 INTRODUCTION

The purpose of Five Year Reviews is to determine whether the remedy at a Site is protective of human health and the environment The methods findings and conclusions of reviews are documented in Five Year Review reports In addition Five Year Review reports identify issues found during the review if any and specify recommendations to address them

The U S Environmental Protection Agency (U S EPA) Region 3 is preparing this Five Year Review pursuant to § 121 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Control Contingency Plan (NCP) CERCLA § 121 states

> *If the President selects a remedial action that results in any hazardous substances pollutants or contaminants remaining at the Site the President shall review such remedial action no less often than five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented In addition if upon such review it is the judgment of the President that action is appropriate at such Site in accordance with Section 104 or 106 the President shall report to Congress a list of facilities for which such review is required the results of all such reviews and any actions taken as a result of such reviews*

The agency interpreted this requirement further in the NCP 40 Code of Federal Regulations (CFR) § 300 430(f)(4)(ii) states

> If a remedial action is selected that results in hazardous substances pollutants or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action

U S EPA Region 3 has conducted a Five Year Review of the remedial actions implemented at the Osborne Landfill Superfund Site (the Site) located in Pine Township Mercer County Pennsylvania This review was conducted from December 2009 through September 2010 This report documents the results of the review

This is the third Five Year Review for the Site triggered by the date of the last Five Year Review (September 8 2005) The Five Year Review is required due to the continued presence of hazardous substances pollutants or contaminants at the Site above levels that would allow unrestricted/unlimited use

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2 0 SITE CHRONOLOGY

Table 1 lists the chronology of events for the Site

Table 1
Chronology of Site Events

Event	Date
The Osborne Landfill operated for twenty years until the Site was closed by Pennsylvania Department of Environmental Resources (PADER) for not having a permit to accept wastes	Late 1950s April 7 1978
U S EPA began assessing conditions at the Site	Early 1980s
Cooper Industries voluntarily installed a security fence around the Site and removed and disposed of 83 filled drums 460 empty drums and 45 cubic yards of soil	1983
The Site was listed on the National Priorities List (NPL)	September 1 1983
Cooper Industries conducted an Remedial Investigation (RI) of the Site under a Consent Order with Pennsylvania but was unwilling to comply with all the required conditions	September 23 1983 approximately June 1984
The U S EPA took over investigation and completed an intensive study of Site conditions and produced the RI Feasibility Study (FS) and Remedial Action (RA) reports	October 22 1987 August 1989
Record of Decision (ROD)1 was issued for installation of a slurry wall around the perimeter of the site and a clay cap to prevent infiltration into the fill	September 28 1990
The U S EPA issued a Unilateral Administrative Order (UAO) to Cooper Industries to perform Remedial Design (RD)/RA for ROD1	March 29 1991
The U S EPA entered into an Administrative Order on Consent (AOC) with Cooper Industries to conduct a focused RI FS and RA for ROD2	October 9 1992
Cooper Cameron extended a public water line to residents at risk near the Site	1994
ROD1 on site construction began	August 5 1995
ROD2 was issued and addressed all site groundwater and wetlands	December 30 1997
ROD1 construction was completed	Summer 1997
Explanation of Significant Differences (ESD)1 modified the way the inward hydraulic gradient was measured and some institutional controls for the Site ESD2 modified some of the well locations that would be used to monitor groundwater contamination	August 24 1998
A Preliminary Closeout Report (PCOR) was prepared	September 21 1998
ROD2 sampling to monitor natural attenuation began	Spring 1999
The first Five Year Review was completed	July 28 2000
The Operable Unit (OU)1 groundwater treatment system was shut down in accordance with an Extraction Well Rebound Test approved by U S EPA	February 2004
ESD3 changed the cleanup standards with which the groundwater portion of the selected remedy had to comply	June 29 2004
Rebound testing was completed	September 2005
The second Five Year Review was completed	September 8 2005
An optimization project plan was submitted by a potentially responsible party (PRP)	June 30 2009
The optimization project plan was revised in accordance with U S EPA comments	September 2009
The final round of sampling prior to the Five Year Review was conducted	December 2009
The PRP submitted an optimization project plan memorandum to present results of preliminary activities and proposed modifications	January 4 2010
The optimization plan was initiated	March 2010
A new well was drilled in the Clarion Aquifer and sampled to assess vapor intrusion	April 2010

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3 0 BACKGROUND

3 1 PHYSICAL CHARACTERISTICS AND LAND USE

The Site is located in Pine Township Mercer County Pennsylvania less than 1 mile east of Grove City The Site encompasses approximately 15 acres along the East Pine Street Extension (Figure 1) To the north of the Site are woodlands Farmland is present to the east and southeast across the East Pine Street Extension A large shallow pond is located just west of the Site and considered to be a federally protected wetland Another wetland is situated south of the Site on both sides of the East Pine Street Extension

The immediate Site area is sparsely populated Most of the residential homes near the Site are located along Enterprise Road which is approximately 0 25 miles north of the Site or are located to the east along Diamond Road

The Site is an abandoned coal strip mine that operated as a landfill from the late 1950s to 1978 The 15 acre property included an abandoned strip mine mine spoil piles and highwall areas Contaminated spent foundry sand and other industrial wastes were disposed of at the Site In 1978 the State closed the landfill for accepting industrial wastes without a permit There are no current or projected land uses for the Site

Residential homes near the Site previously were on private wells and used groundwater for potable and nonpotable water supplies Cooper Cameron Corp formally Cooper Industries Inc a potentially responsible party (PRP) extended the municipal water line around the eastern perimeter of the Site after high levels of contaminants were found in a residential well In 1994 Cooper Cameron connected any resident within 150 feet of the water line who was willing to accept the connection Only one resident refused to connect to public water this well has been periodically sampled since 1998 Site contaminants have not been detected in this well

3 2 HISTORY OF CONTAMINATION AND INITIAL RESPONSE

Strip mining was conducted at the Site during the 1940s In the late 1950s the privately owned landfill began accepting various types of industrial wastes and fill material was deposited into the strip pool at the base of the highwall The highwall was undisturbed rock and earth that formed the uphill side of the strip mine pit The earth and rock that was removed to reach the coal was piled downhill and is known as the spoil This spoil forms the downhill side of the mine pit After the mine was abandoned the pit filled with groundwater Wastes were disposed in the pit and gradually filled in the strip mine displacing the water Approximately 233 000 cubic yards of fill material was disposed of at the former landfill

Materials disposed of at the Site included spent foundry sand infilco sludge (settled sludge collected from hydroblast equipment) spent carbide (a by product consisting of a lime and water slurry) waste acids from plating and cleaning tanks spent Sunoco® spirits and solvents Miscellaneous debris including scrap steel wood and metal chips was taken to the former disposal area Solid waste and manufacturing refuse was present on the surface of the Site and within the fill material The wide array of wastes disposed at the Site contained polychlorinated

biphenyls (PCBs) (primarily Aroclor 1254) polynuclear aromatic hydrocarbons (PAHs) metals (including lead and chromium) and several volatile organic compounds (VOCs)

From the late 1950s until 1963 the Site was operated as a waste disposal area by Mr Samuel Mohoney Disposal activities continued from 1963 until 1978 under Mr James Osborne the owner of the Site On April 7 1978 James Osborne was cited by the Pennsylvania Department of Environmental Resources (PADER) now known as the Pennsylvania Department of Environmental Protection (PADEP) for operating a non permitted landfill and was ordered to close the landfill An exception was made allowing the foundry sand disposal to continue for a short time to form a cover for the wastes

Cooper was identified by the U S EPA as a PRP for the Site Records from Cooper indicate the amount and type of industrial wastes disposed of at the Site The wastes included foundry sand from Cooper contaminated through co disposal with other hazardous substances General Electric Corporation also identified as a PRP disposed of materials at the Site containing hazardous substances between approximately May 1972 and December 1978 General Electric contributed a cash settlement to reimburse the U S EPA for past costs

The Site was investigated by the U S EPA and the PADER following its closure as a non permitted landfill PADER found high concentrations of oils and phenols in the pond waters at the time of the closure Site inspections also found over 600 drums on site Hundreds of the drums were present on the surface of the site and some drums were leaking In a letter dated January 14 1983 the U S EPA notified Cooper and other PRPs of the need for immediate action at the Site Cooper built a security fence around the Site and posted warnings to restrict access Cooper also removed and disposed of 83 filled drums and 45 cubic yards of contaminated soil On September 1 1983 the U S EPA finalized the listing of the Site on the CERCLA National Priorities List (NPL)

A Site plan is included as Figure 2

3 3 BASIS FOR TAKING ACTION

Cooper entered into a Consent Order and Agreement (COA) with PADER on September 23 1983 to conduct a Remedial Investigation (RI) and Feasibility Study (FS) at the Site In 1985 the U S EPA also conducted an investigation of the disposal area to determine the contaminants in the waste However in 1984 Cooper was unwilling to comply with certain conditions required by the State and the U S EPA and stopped work on the RI The U S EPA and PADER could not come to agreement with Cooper on additional sampling required pursuant to the Superfund Amendments and Reauthorization Act (SARA) and on the implementation of the FS At the request of the State U S EPA notified Cooper in a letter dated October 22 1987 that U S EPA had assumed the lead at the Site and would conduct the RI/FS using Superfund monies The RI/FS completed by the U S EPA from 1988 through 1989 assessed the nature and extent of contamination in all media

The multiple RIs conducted at the Site focused on the fill area the wetland to the southwest of the Site the Clarion Aquifer/Mine Void system the Homewood Aquifer System and the deeper Connoquenessing and Burgoon Aquifers The RIs verified the presence of PCBs PAHs heavy

metals and chlorinated hydrocarbons above U S EPA s action levels in the fill material at the Site Vinyl chloride (VC) was also found in the Clarion Formation groundwater at concentrations greater than the maximum contaminant levels (MCLs) allowed by the U S EPA s Safe Drinking Water Act (SDWA)

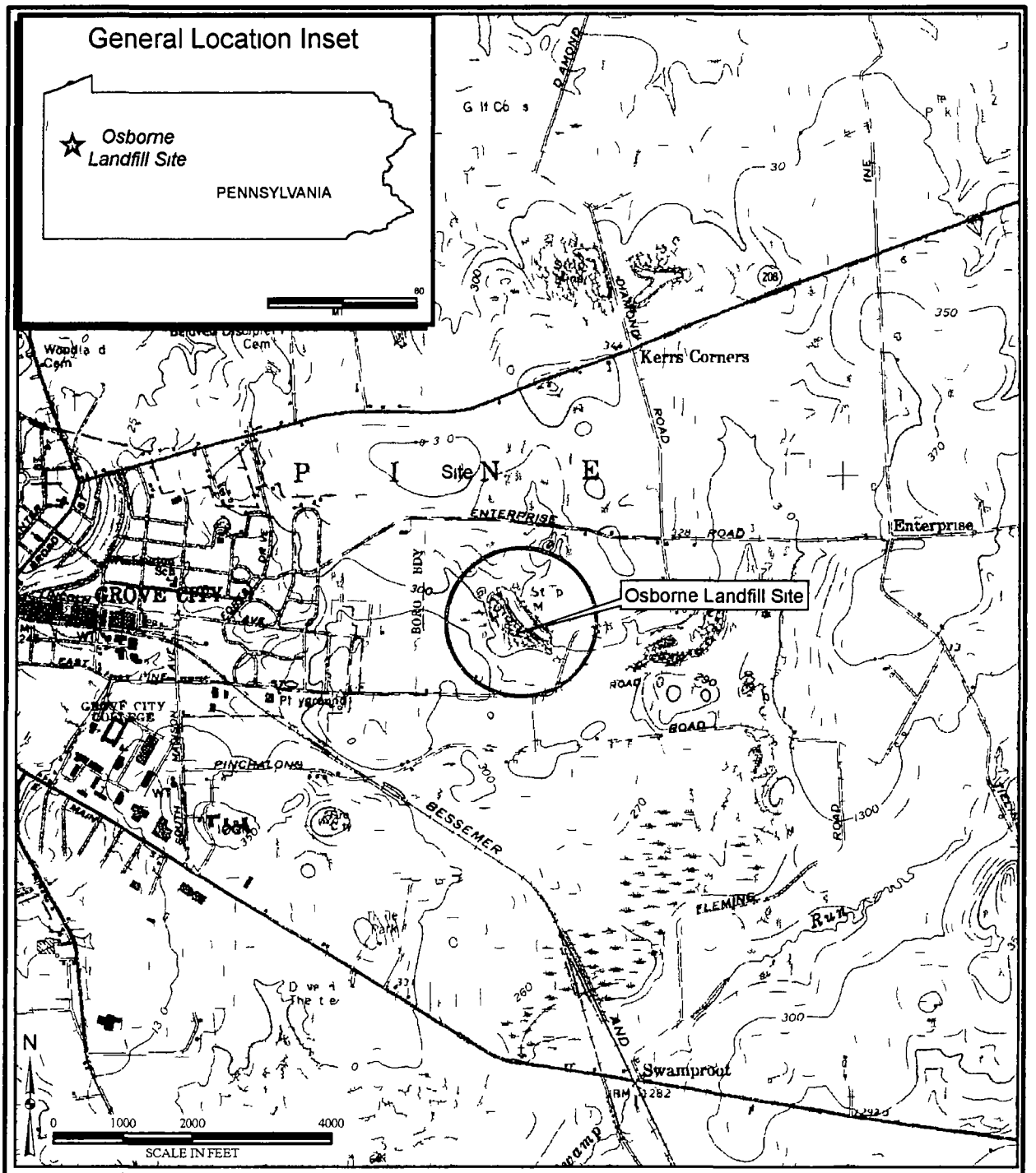

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Figure 1
Site Location Map

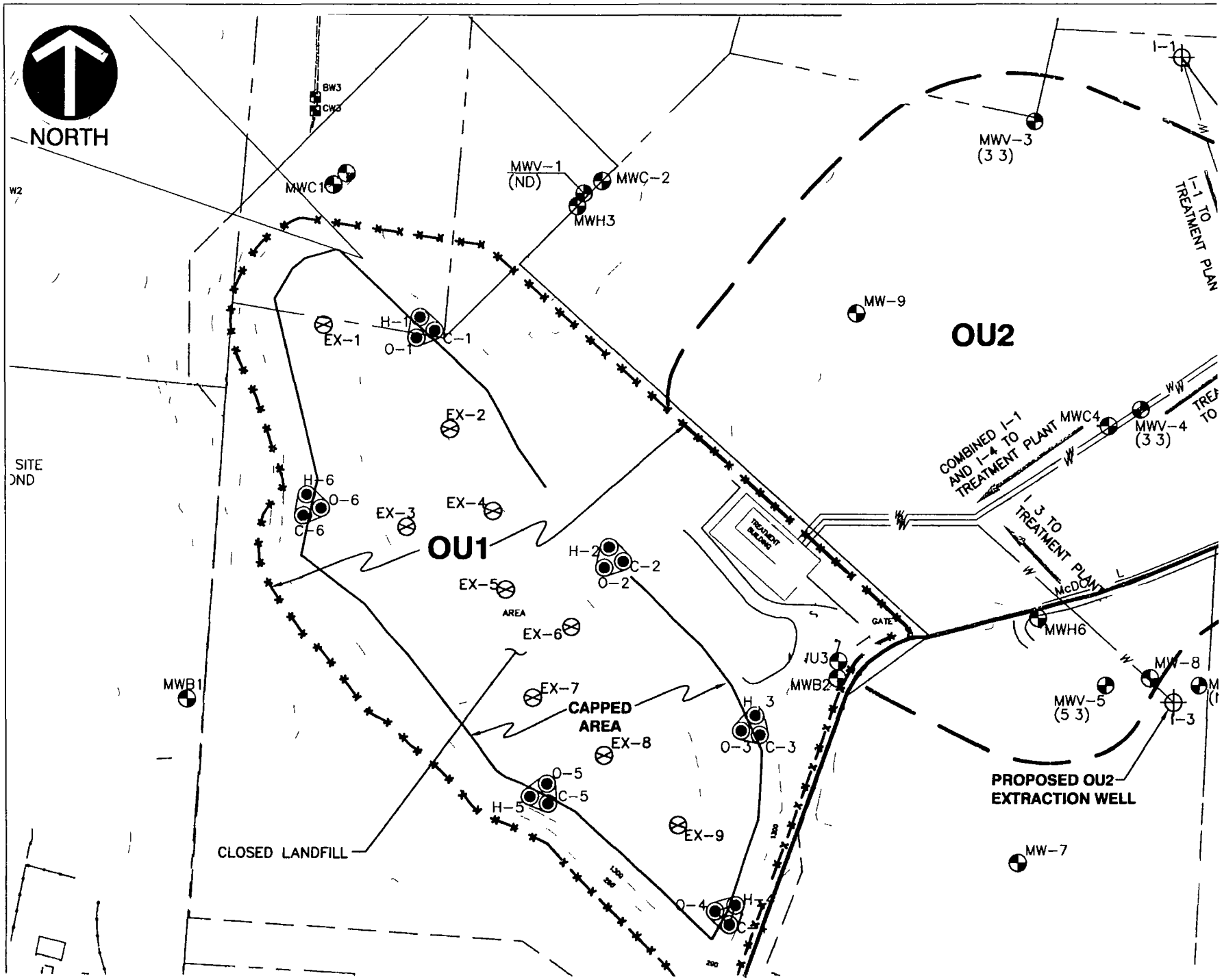
NORTH
BW3
CW3
MWC1
MWV-1
(ND)
MWC-2
MWH3
MWV-3
(3 3)
I-1
I-1 TO
TREATMENT PLAN
MW-9
OU2
EX-1
H-1
O-1
C-1
EX-2
COMBINED I-1
AND I-4 TO
TREATMENT PLANT
MWC4
MWV-4
(3 3)
SITE
H-6
O-6
C-6
EX-3
EX-4
OU1
TREATMENT
BUILDING
I-3 TO
TREATMENT PLANT
H-2
C-2
O-2
EX-5
AREA
EX-6
GATE
MWH6
MW-8
MWB1
MWB2
EX-7
CAPPED
AREA
EX-8
H-3
O-3
C-3
MWV-5
(5 3)
I-3
O-5
C-5
H-5
PROPOSED OU2
EXTRACTION WELL
CLOSED LANDFILL
EX-9
MW-7
O-4
H-4
C-4

Figure 2

4 0 REMEDIAL ACTIONS

The following decision documents have been issued for the Site

- 1990 ROD
- 1997 ROD
- 1998 Explanation of Significant Differences (ESD)
- 1998 ESD
- 2004 ESD

4 1 REMEDY SELECTION

ROD1 dated September 28 1990 addressed the following OUs

- Solid waste fill material (OU1)
- On-site water table (OU3)
- Clarion Formation (OU4)

Because of implementability issues discovered during the subsequent design phase the remedy for OU4 was changed in the 1997 ROD

The second ROD (ROD2) dated December 30 1997 presents the selected remedy for OU2 (wetland sediments) OU4 (Clarion Formation and Mine Pool) and OU5 (Homewood Connoquenessing and Burgoon Aquifers) at the Osborne Landfill Site

4 1 1 1990 Record of Decision (ROD1)

4 1 1 1 Operable Unit One (OU1) – Solid Waste Fill Material

The remedy chosen for OU1 consists of a slurry wall barrier around the perimeter of the fill and a pump and treat system to produce a negative pressure The rationale for this remedy is to effectively contain the fill contaminants and remove the threat of contaminant migration to groundwater

The major components of this remedy are

- Construction of a slurry wall around the fill area perimeter
- Run on and run off controls including a clay cap (tied in to the slurry wall) and on site drainage and erosion controls
- Installation of a bulkhead to seal openings or cracks linking the fill to the mine
- Installation and operation of extraction wells treatment of extracted water and subsequent injection of treated water into the on site mine pool and
- Implementation of institutional controls (ICs) and groundwater monitoring

ICs required as part of the OU1 remedy in the ROD1 include prohibitions on the use or disturbance of groundwater until cleanup levels are achieved requirements for all property owners within 150 feet of the water main to connect to the main prohibitions on the installation of new wells within the property containing the landfill and requirements for groundwater monitoring

4 1 1 2 Operable Unit Three (OU3) – On Site Water Table

ROD1 included language indicating that if the slurry wall implementation for OU1 was effective no additional action would likely be required to address the on site water table

4 1 1 3 Operable Unit Four (OU4) – Clarion Aquifer

The remedy selected for OU4 was the extraction and treatment of the groundwater to reduce the VC concentrations with on site injection of the treated water to the Clarion Formation

The major components of this remedy include

- Construction and operation of extraction wells in the Clarion
- Removal of VOCs contaminants by air stripping
- Injection of the treated groundwater back into the mine pool and
- Groundwater monitoring

4 1 2 1997 Record of Decision (ROD2)

ROD2 was issued December 30 1997 and revised the groundwater remedy for the Clarion Aquifer (OU4) from pump and treatment to monitored natural attenuation Monitored natural attenuation was also selected for the mine void and deeper aquifers ROD2 addresses all Site groundwater and the wetlands to the southwest of the Site At the time contaminants in the Clarion Aquifer groundwater were present at concentrations greater than the SDWA MCLs but these contaminant levels were near MCLs and were expected to reach MCLs within 5 years from the issuance of ROD2 Residents on the perimeter of the Site were provided access to a public water line All but one of the residences on the perimeter of the Site near the contaminant plume has been connected to the water line The groundwater in the Homewood Connoquenessing and Burgoon aquifers is not contaminated above either risk based levels or MCLs

The selected remedy in ROD2 includes the following components

- Natural attenuation of the Clarion Formation with continued groundwater monitoring for VOCs in the Clarion wells mine void wells and residential wells
- Periodic residential well sampling
- Continued monitoring of the Homewood Connoquenessing and Burgoon Aquifers for 3 years and
- No action for the southwest wetland sediments

4 1 2 1 Operable Unit 2 Wetland Sediments

U S EPA entered into an Administrative Order on Consent (AOC) with Cooper on October 9 1992 This AOC required the performance of a focused supplemental RI FS and Risk Assessment limited to the wetland sediments southwest of the Site and groundwater in the Homewood Connoquenessing and Burgoon Aquifers The RI included sampling of sediments and surface water in the wetlands bioassay studies and studies of PCB bioaccumulation in earthworms The studies showed that the wetlands had not been impacted by site contaminants and U S EPA therefore selected no action for OU2

4 1 2 2 Operable Unit 4-Clarion Formation

A description of the Site geology is necessary to understand U S EPA s decision to revise the selected remedy for OU4 The area geology is characterized by the Clarion Formation The Clarion Formation is the uppermost continuous bedrock unit beneath the Site and vicinity It is characterized by interbedded sandstone shale and coal units The lowermost unit of the Clarion Formation is the Brookville Coal which is generally several feet thick and is economically minable The associated underclay is up to 9 feet thick beneath the Site The coal was strip mined at the Site and deep mined in adjacent areas

Overlying the Brookville Coal is a 20 to 50 foot thick series of sandstone and sandy shale referred as Clarion Sandstone The Clarion Sandstone is absent west of the Site and was removed from most of the Site by strip mining activities In deep mined areas immediately east of the strip mined area the unit is up to 40 feet thick It has been identified as a fine to medium-grained micaceous sandstone with thin interbedded layers of siltstone

To the east of the fill area are networks of open mine voids full of groundwater forming a mine pool Results from samples collected from numerous monitoring wells in this area indicate that VC contamination was present at relatively high concentrations in the mine voids but only trace levels of VC were present in the Clarion Aquifer The only observed exception to this was the one residential well in the Clarion Aquifer which contained 10 to 15 micrograms per liter (µg/L) of VC In the Homewood Aquifer VC has only been detected in samples from one well directly adjacent to the slurry wall

ROD1 originally selected pump and treatment as the remedy for contaminated groundwater in the Clarion Aquifer However during the design of remedies selected in ROD1 pump tests showed that it was not possible to implement the system described in ROD1 It became apparent that due to mine subsidence the Clarion Aquifer was fractured and that a well placed in the Clarion Formation would preferentially draw mine void water upward in a column through the thin Clarion sandstone layer As a result each well would have a very small lateral capture zone and numerous wells would be needed An extraction well would also draw contaminated mine water into the Clarion Formation which is used as a drinking water aquifer in the vicinity Another extraction option would result in the extraction and treatment of a very large volume of mine water to remove relatively small levels of contaminants

Groundwater samples taken over several years showed that contaminants in the Clarion Aquifer/mine pool were declining and were expected to reach MCLs within 5 years Therefore

for OU4 U S EPA selected natural attenuation with monitoring until MCLs are reached and maintained The groundwater monitoring program consisted of sampling five wells in the mine void (mine void well [MWV] 4 MWV 6 MWV 7 MWV 8 and MWV 9) on a quarterly basis six wells in the Clarion Aquifer (MWC 2 MWC 3 MWC 4 MW 7 MW 8 and MW 9) on a semiannual basis and eight wells in the mine void system (MWV 1 through MWV 8) on a semiannual basis The groundwater samples have been analyzed for low level Target Compound List (TCL) VOCs with results summarized in annual reports

4 1 2 3 Operable Unit 5 Homewood Formation

The ROD2 required sampling of a moderate number of wells in the deep aquifers at the Site as part of the Natural Attenuation Remedial Action Decision The RI/FS data showed a substantial decline in contamination indicating probable natural attenuation of contaminants Natural attenuation with monitoring was selected for OU5 with 3 years of groundwater monitoring stipulated

Natural attenuation with monitoring was also selected for the existing wells in the Connoquenessing and Burgoon Aquifers to verify that contamination is not migrating from the Site toward community wells Water quality monitoring using standard methods that are routine and widely accepted is required

The rationale for this remedy was that only sporadic low levels (below MCLs) of site related contaminants were found in the Homewood Connoquenessing or Burgoon aquifers during the focused RI Additionally U S EPA took into consideration that the Site has been disturbed by construction activities and groundwater flow patterns in the shallow aquifer will change somewhat because of the presence of the slurry wall U S EPA believes that it is prudent to monitor these wells (which are between the Site and the Grove City municipal wells) to make sure that the aquifers remain clean

Groundwater monitoring consisted of sampling three wells in the Connoquenessing Aquifer and three wells in the Burgoon Aquifer for 3 years on a semiannual basis to confirm past monitoring results The ROD stated that if site related contaminants are not found in the wells during the 3 year period the wells would be abandoned

As stated in the first Five Year Review no site related contaminants were found in the deeper aquifers

Currently OU2 is defined as groundwater in those portions of the Clarion Aquifer (including certain residential wells and mine void wells in the Brookville Coal) the Homewood Aquifer and Connoquenessing and Burgoon Aquifers located near the Site but outside of the fill area OU1 currently refers to the waste material and groundwater in contact with the waste material

4 1 3 First Explanation of Significant Differences (ESD1)

ESD1 was signed on August 24 1998 This ESD eliminated most of the ICs called for by ROD1 and clarified the scope of the remaining ICs The modified ICs reduced the area in which new wells are prohibited from a 0 5 mile radius surrounding the Site to just the property containing

the landfill Additionally ESD1 clarified that the Commonwealth of Pennsylvania will enforce the prohibition on mineral removal near the Site ESD1 also eliminated the requirement to maintain an inward gradient for Homewood Aquifer performance wells H 3 and H 4 Even when contamination in the leachate associated with the fill was present at elevated levels the Homewood Aquifer was not exhibiting significant contamination As a result there was no need to maintain an inward gradient requirement for the Homewood Aquifer Additionally the compliance standards were revised from Method Detection Limits to Practical Quantitation Levels for OU1 for groundwater and leachate

4 1 4 Second Explanation of Significant Differences (ESD2)

ESD2 issued on August 24 1998 modified the list of wells to be monitored In ROD2 U S EPA specifically listed the wells that would be monitored as part of the selected remedy However two wells on the list were abandoned because their location interfered with the slurry wall and clay cap construction During construction two other wells C 2 and C 3 were installed near the abandoned wells These new wells perform the same functions as the closed wells

4 1 5 Third Explanation of Significant Differences (ESD3)

ESD3 issued June 29 2004 revised the cleanup standards with which the groundwater portion of the ROD1 selected remedy must comply The performance standards identified in ROD1 require that groundwater in contact with the waste be remediated to reduce the levels of contaminants in the groundwater to background levels These standards also require that the remedy prevent the migration of contaminants out of the containment area ROD1 specifies that this requirement was set forth in the Pennsylvania Hazardous Waste Management Regulations When ROD1 was issued, Pennsylvania s background levels standard was more stringent than the MCLs under the SDWA

The background levels standard cited in ROD1 was withdrawn by PADEP and replaced with standards established by the Pennsylvania Land Recycling and Environmental Remediation Standards Act (also known as Act 2) U S EPA determined that with exceptions for nickel and lead the remediation standards contained in Act 2 do not impose any requirements that are more stringent than federal standards Therefore U S EPA determined that except in the cases of nickel and lead MCLs would be used as performance standards for the remediation of groundwater at the Site U S EPA has determined that the Act 2 standards are applicable for nickel and lead in groundwater at the Site

4 2 REMEDY IMPLEMENTATION

4 2 1 ROD1

Cooper performed the Remedial Design (RD) and Remedial Action (RA) under a Unilateral Administrative Order (UAO) issued on March 29 1991 Cooper s contractor mobilized and began on site construction on August 5 1995 The Site was grubbed and graded and a bench cut into the highwall on the northern side of the Site The mine system on the northeast side of the Site was completely sealed and bulkheaded with grout A slurry wall was installed around the

perimeter of the fill area and through the bulkheaded mines completely surrounding the strip pit and waste The slurry wall was installed to an approximate depth of 40 feet and keyed into the sandstone below the clay layer at the base of the strip pit to ensure structural integrity A multilayered cap was installed over the fill area and tied into the slurry wall to reduce infiltration Drainage channels were built around the cap to collect stormwater runoff which is discharged to a stream adjacent to the landfill Six performance well nests were installed to measure the pressure in the fill the Clarion Formation and the Homewood Formation These wells also are sampled for contaminants

The leachate treatment system was constructed at the same time as the slurry wall and cap The on site leachate ponds were drained and backfilled and after treatment the leachate is discharged through injection wells installed into the mine pool to the northeast of the Site The area within the slurry wall was graded and a network of extraction wells and connecting piping was installed in the fill The extraction wells in the fill lower the water table to produce an inward gradient pulling any groundwater that might leak through the slurry wall inward The extraction wells remove about 10 to 20 gallons per minute of contaminated groundwater from the underlying/surrounding aquifers The leachate extraction system began operating in January 1996 and was used to remove infiltrating rain water during cap construction In July 1998 the cap was completely vegetated and the escrowed money due to the contractor was released by Cooper

The leachate treatment system comprises a set of piping and manifolds sampling ports computer control systems and the actual treatment units The collected leachate from each well was fed through conveyance piping to an equalization tank The leachate was then processed through a low profile air stripper to remove volatile contaminants Manganese iron and other metals were removed in a green sand filtration system which is regenerated by a potassium permanganate solution Carbon adsorption units were then used as a polishing step The treated water was then discharged through an underground piping system to three reinjection wells which are located in the mine pool to the northeast of the Site The treated water met all MCLs required by the SDWA

The gradient between the fill and the Clarion Aquifer is adequate along the wall The lowered water level in the containment area has generally produced an inward gradient between the Homewood Aquifer and the fill however two wells did not respond as expected The performance wells H 3 and H 4 indicate that there is not an inward gradient at the southern end of the Site along the Pine Street Extension During construction U S EPA realized that additional extraction wells might be needed and ran piping for these wells U S EPA required Cooper Industries to analyze the information and try to determine the cause for the lower gradient along this section of the slurry wall The report from Cooper Industries suggests that these extraction wells are preferentially drawing water from the Homewood Aquifer rather than the fill due to the lack of a clay layer in this area U S EPA determined that the inward gradient was sufficient to satisfy the performance standard in the ROD1

Additionally there was the decline in well yields U S EPA met with Cooper on July 12 2000 to review the recent groundwater data including extraction well yields performance well levels and concentrations and trends over the past several years It appeared that the decline in well

yields was due to a steady decline in the adjacent aquifers which was documented by computer logs of the pressure levels in both the Homewood and Clarion Aquifers The hydraulic gradients were still very similar to those observed in previous years

ROD1 required at least one foot of inward hydraulic gradient The containment system has achieved a performance level greater than this gradient with respect to the Clarion Aquifer and with respect to most of the performance wells in the Homewood Aquifer The six performance well nests installed at even intervals along the perimeter of the slurry wall monitor water levels and are sampled periodically for contaminants of concern As shown by the sampling results the containment is working as expected and there have been no major releases of contamination through the slurry wall

The leachate treatment system operated from 1996 to 2004 In 2003 the PRP prepared an Extraction Well Rebound Test and submitted the proposal to the U S EPA to shut down the leachate treatment system The system was shut down in February 2004 and the rebound test was conducted Sampling of the performance wells has continued on a semiannual basis and demonstrates that the site related contaminants of concern remain below MCLs with the exception of VC in wells C 2 and H 2 Additionally samples from wells surrounding the Site demonstrate that the containment system is working and site related contaminants are not migrating from the Site Based on these findings the system has remained off with the approval of the U S EPA

The containment system appears to be meeting the Remedial Action Objectives (RAOs) for the on site water table by preventing the migration of contamination into the aquifers that supply drinking water to area residents Added protection is present in the form of a public water line serving residences located around the Site The water line was installed in 1994 and extends along Enterprise Road (north of the Site) to Diamond Road (located to the east of the Site) and extends south and west along Diamond Road A township ordinance requires all property owners to connect to the public water supply unless they are more than 150 feet from the service line This water line gave the adjacent residences public water and provided protection to other residents located even farther from the Site All but one residence in the area are connected to the public water system Only one contaminated residential well was identified and this residence is connected to the public water supply

On June 11 1999 Cooper purchased the 22 acres of property containing the landfill Cooper has complied with the institutional control requirements which include prohibitions on the use or disturbance of groundwater until cleanup levels are achieved and prohibitions on new wells within the property containing the landfill A fence was constructed around the Site to restrict access and a deed restriction was placed on the property to restrict the use of the property

The Pine Township Ordinance No 5 1982 Rules and Regulations Governing the Furnishing of Water Services requires all residence to connect to the public water supply if they are within 150 of the Township water main The Township water main surrounds the Osborne Landfill Site and therefore the water main services the area within the groundwater plume The approximate location of the water main is indicated on Figure 2 and the Ordinance can be found in Attachment 4

Cooper also replaced several acres of wetlands that were damaged during the installation of the cap During the 2010 site visit the U S EPA Biological Technical Assessment Group (BTAG) noticed that the wetland mitigation area adjacent to the western boundary of the Site did not appear to be performing as anticipated and that there appeared to be insufficient water to adequately hydrate the area Recommendations have been made to improve the mitigated wetland area

4 2 2 ROD2

During the design phase that was carried out to implement the requirements of ROD2 it became apparent that due to mine subsidence the Clarion Aquifer was fractured and that a well placed in the Clarion Formation would preferentially draw mine void water upward in a column through the thin Clarion sandstone layer As a result each well would have a very limited lateral capture zone and numerous extraction wells would be needed to implement this remedy It also was determined that an extraction well likely would draw contaminated mine water into the Clarion Formation which is used as a drinking water aquifer in the vicinity Therefore as documented in the 1997 ROD U S EPA changed the remedy for the Clarion Formation to monitored natural attenuation

The deeper aquifers were of special concern because the municipal wells were within 2 miles to the northeast of the Site U S EPA required the placement of additional deep well nests in both the Connoquenessing Aquifer and the deeper Burgoon Aquifer between the municipal well location and the Site These well nests were monitored and did not show contamination

Recent analytical results from the natural attenuation groundwater monitoring indicate that VC levels continue to decline over a wide area of the plume However 2005 through 2010 sample results indicate that three of the mine void wells (MWV 3 MWV 5 and MWV 9) and one residential well have not shown significant decreases in VC contamination over this time period and VC concentrations in these wells remain above the MCL If natural attenuation were allowed to proceed it is likely that this area would be the last section to reach MCLs As a result Cooper Cameron has proposed an optimization plan for the mine void and Clarion Aquifer wells included in OU2 (groundwater portions of the Clarion Aquifer (including certain residential wells and mine void wells in the Brookville coal) Cooper Cameron suggests that the VC is not naturally attenuating because the conditions in the mine void are generally static and anaerobic Therefore they have proposed using existing reinjection wells one new well and the air stripper from the existing treatment system to remediate the VC Water will be extracted using former reinjection wells and the new well The extracted water will be pumped to the treatment building and treated with the air stripper The treated water will then be injected back into the mine void system through an existing reinjection well The U S EPA approved the optimization plan in 2009 Cooper Cameron has begun testing and implementing portions of the design

4 3 OPERATION AND MAINTENANCE

The Site management activities are conducted by Cooper Cameron and its consultant Civil Environmental Consultants (CEC)

4 3 1 Leachate Containment and Treatment System

The groundwater leachate containment and treatment system includes a slurry wall to contain the leachate extraction of groundwater/leachate from inside the closed landfill using nine extraction wells (X 1 through X 9) to develop an inward hydraulic gradient treatment of the extracted water and groundwater monitoring Groundwater monitoring has been conducted at the Osborne Site since the late 1990s As mentioned previously treatment of the extracted groundwater/leachate was discontinued in February 2004 because analysis of the extraction well samples indicated that the leachate had reached MCLs however all of the components of the treatment systems remain in place and the groundwater quality is still monitored

The extraction well rebound test was performed November 2004 to evaluate whether rebound of contaminant levels would occur when the leachate treatment system was shut down The extraction well rebound test showed that the shutdown of the leachate treatment system has not caused a rebound of contaminant levels Analytical data from 2005 to 2010 show that contaminants have reached MCLs over much of the area The U S EPA recommends keeping the extraction and treatment system off but monitoring the on site and off site groundwater as well as one residential well of concern Monitoring should be performed semiannually and include analyses for trichloroethene (TCE) VC pH and checks of groundwater elevations

U S EPA has also approved the optimization plan prepared by the PRP and will allow the PRP to use the leachate treatment system to treat the mine void system The air stripper component of the treatment system will be used to remove VC from mine void water pumped from existing and new wells The treated water will be injected back into the mine void system

4 3 2 Site Maintenance

Site maintenance activities are performed by Cooper Cameron on a regular basis Cooper Cameron performs the following site maintenance activities

- Inspect the general condition of vegetative cover on the Site landfill
- Check for evidence of unauthorized entry or vandalism
- Perform routine mowing of the landfill
- Regularly fill animal burrows
- Inspect the condition of the groundwater monitoring wells treatment facility and security fence

U S EPA was provided with a mowing and site maintenance record as part of the Five Year Review Additionally Dick Weinzerierl Cooper Cameron s site operator was interviewed during the site visit and described site maintenance activities relating to animal burrows Mr Weinzerierl stated that he regularly checks the cap to inspect for animal burrows If a burrow is discovered a trap is placed near the burrow and the animal is captured and removed Once the animal is removed the trap is placed by the burrow and checked regularly for additional captured animals At the end of each fall the burrows are filled in

5 0 PROGRESS SINCE LAST FIVE YEAR REVIEW

At the time of the last Five Year Review the PRP had recently shut down the treatment systems following the rebound tests and U S EPA approval Since that time routine sampling has occurred on a yearly or semiannual basis to monitor the protectiveness of the remedy As shown by the PRP s provided data the contaminants of concern have reached MCLs with the exception of VC VC continues to be an issue in two of the performance wells (one screened in the Clarion Formation and one screened in the Homewood Formation) three of the mine void wells (MWV 3 MWV 5 and MWV 9) and one residential well The performance wells are part of OU1 which has achieved the performance standard specified in the ROD1 OU1 is not currently being treated but containment is still being achieved by the cap and slurry wall system in place at the Site The remedy in place for the mine void and residential wells is monitored natural attenuation

The PRP presented an optimization plan to the U S EPA in June 2009 to attempt to accelerate the decline of VC concentrations in the mine void and residential well The optimization plan was revised in September 2009 in accordance with U S EPA comments The optimization plan proposes pumping water out of the mine void system using existing wells treating the extracted water with the air stripper that is part of the leachate treatment system and then injecting the water back into the mine void system The proposed plan will require the PRP to install additional piping and pumps to pump the extracted water to the treatment building The PRP has conducted preliminary work in support of the optimization activities These activities were presented in a memorandum to the U S EPA dated January 4 2010 The PRP conducted pumping and injections tests to confirm that the chosen wells would work for the extraction and injection of the mine void water Additionally they tested MWV 9 for extraction but found that the yield from this well was not appropriate for use as an extraction well The PRP concluded that wells I 1 and I 3 will be used as extraction wells and well I 2 will be used as an injection well Because one resident refused access to their well for the treatment of the mine void water the PRP presented plans to install a new well within 100 feet of the originally proposed well for use as an extraction well The optimization activities commenced in March 2010

As part of this Five Year Review U S EPA has requested that the PRP conduct a vapor intrusion study at one residence The PRP added a vapor intrusion sampling plan to the optimization plan but the resident refused to allow vapor sampling Consequently no direct vapor intrusion sampling of the residence occurred as part of the optimization activities or Five Year Review Instead a monitoring well in the shallow Clarion Aquifer near I 4 was installed to evaluate the potential vapor intrusion pathway The data show that the Clarion Aquifer at this location is non detect for VC so the vapor intrusion pathway is incomplete for the residence

The protectiveness statement from the previous Five Year Review was as follows

The remedial actions constructed for this site remain protective of human health and the environment in the short term The constructed remedies are functioning as intended and there are no current exposure pathways The remedies which included the landfill leachate collection system the landfill cap and slurry wall groundwater monitoring and the ICs continue to achieve the Remedial Action Objectives (RAOs) for the Site The remedies eliminate contamination

emanating from the Site minimize migration of contaminants to ground and surface waters and prevent direct contact with or ingestion of contaminants

The last Five Year Review completed in September 2005 provided several recommendations/follow up actions in response to Site specific issues The following issues were identified

(1) Extraction well shutdown rebound test was in effect

(2) Continue and optimize groundwater monitoring well sampling

(3) Routine well and cap maintenance program including checking for animal burrows

5 1 ISSUE #1

At the time of the last five year review the extraction well shutdown rebound test was taking place to see if contaminants would rebound when the OU1 groundwater treatment system was shut down The analytical results following this test showed that contaminants were not rebounding and that the contaminants were still approaching MCLs over much of the plume Therefore U S EPA recommended that the system remain shutdown but monitoring of the wells continue The specific monitoring scheme was to monitor on site off site and one residential well semiannually for trichloroethene VC pH water levels and total suspended solids for one year This sampling scheme has continued for the past 5 years and the results are presented in the Data Review section The treatment system remains shut down

5 2 ISSUE #2

The recommendation/follow up action provided in the September 2005 Five Year Review in response to the issue of optimizing the sampling scheme was to sample monitoring wells for trichloroethene VC pH and total suspended solids semiannually Specifically the following wells were to be monitored C1 C2 C3 C4 C5 C6 H1 H2 H3 H4 H5 H6 MW7 MW8 MW9 MWC2 MWC4 MWV1 MWV3 MWV4 MWV5 MWV6 MWV7 MWV8 MWV9 and the one residential near the Site Following this sampling event U S EPA was to review the data and either reduce or maintain the sampling scheme Further the U S EPA reserved the right to increase monitoring or startup the treatment system again if contaminant trends increased The sampling scheme proposed in the last five year review still remains in effect and has not been modified to reduce any sampling The results of the groundwater sampling are presented in the Data Review section

5 3 ISSUE #3

The recommendation/follow up action provided in the September 2005 Five Year Review was that the PRP should check the condition of the monitoring wells and multilayer cap with regards to animal burrowing during the sampling of the wells During the site visit the Cooper Cameron representative at the site indicated that he regularly checks for animal burrows When animal burrows are encountered the animals are trapped and removed The traps are again placed by the holes and left there until late fall when the holes are filled in Burrows were observed during

a subsequent site visit and reported to Cooper Cameron s representative CEC the PRP s consultant reported that they check well conditions each time they sample the wells

6 0 FIVE YEAR REVIEW PROCESS

6 1 ADMINISTRATIVE COMPONENTS

The Osborne Landfill Five Year Review team was led by Rashmi Mathur U S EPA Remedial Project Manager (RPM) for the Site Bruce Pluta U S EPA BTAG Jennifer Hubbard U S EPA Toxicologist John Morettini and Gary Mechtly PADEP Project Managers Kathy Patnode U S Fish and Wildlife Service (USFWS) and Misty Kauffman HydroGeoLogic Inc (HGL) Project Manager also participated in the Five Year Review

A site visit occurred on December 3 2009 and was conducted by the team with contractor representatives from CEC and Cooper Cameron Additionally HGL U S EPA s contractor conducted a site and cap inspection on March 25 2010

Components for completion of the Five Year Review included the following

- Public notice of Five Year Review
- Document review
- Data review
- Site Inspection
- Five Year Review Report preparation

6 2 COMMUNITY INVOLVEMENT

The RPM responded to multiple letters and e mails regarding questions about the Osborne Site The following section addresses the major concerns identified U S EPA responded to questions about site contaminants and groundwater data and provided clarifications to concerns about well data from the 2005 five year review A resident expressed concern about the Osborne Landfill Site affecting the Grove City Borough Water Supply OU1 includes the on site waste material and groundwater in contact with those wastes OU1 was addressed by an on site containment system that included a slurry wall a multilayer cap and an extraction and treatment system to treat on site groundwater In addition the groundwater is still monitored The groundwater goals for OU1 in ROD1 were reached in 1998 Following a contaminant rebound test the groundwater recovery system was shut down in February 2004

An additional concern was expressed by a resident regarding the results from residential well sampling near the Osborne Site Due to privacy issues U S EPA is not allowed to release any results of the specific residential wells If there are any residential well results of concern they are shared with the resident Some residential wells are sampled regularly Thus far there is only one residential well with a contaminant of concern and the residents have been advised and are connected to public water Further the public water main encircles the Osborne Site and the entire area encompassed by the groundwater plume has public water available

Another resident raised a concern about the lake located east of the Site The U S EPA has requested that a sample be collected from the lake and analyzed for site contaminants so that the data will be evaluated and provided in the Five Year Review The Responsible Party collected a sample from the lake and found that there was no site related contamination

Public water supplies have federal and state mandated sampling requirements No additional sampling is warranted due to the presence of the Osborne Landfill Investigations conducted in the 1990s did not identify site contaminants on site near the water supply wells Since then remedial measures have been taken The landfill has been capped and enclosed in a slurry wall and the groundwater at the landfill has achieved goals for the OU1 ROD Therefore the risk is even smaller If there are any more questions on the Grove City Water Plant contact Mark Taddy at 724 458 9440

U S EPA placed advertisements in the local newspaper (Allied News) on January 20 and on March 17 to inform residents of the Osborne Five Year Review The second advertisement corrected minor spelling errors and a phone number Both advertisements indicated U S EPA was conducting the third five year review for the Site and provided point of contact information as well as the location of the information repositories for the Site

6 3 DOCUMENT REVIEW

Pertinent documents were reviewed as part of this Five Year Review These documents are listed below along with the pertinent information contained in each report

- 1990 ROD 1997 ROD 1998 ESD1 and ESD2 2004 ESD3
  - Initial response action summary
  - Protectiveness Statement
  - Technical Assessment
- 2000 First Five Year Review Report
  - Site history
  - Past recommendations and protectiveness of Site remedy
- 2005 Second Five Year Review Report
  - Site history
  - Past issues recommendations/follow up actions and protectiveness of Site remedy
- Pine Township Ordinance Number 5 1982
  - Municipal water line ordinance
- CEC data and reports (2009 Optimization Plan 2008 and 2009 Trip Reports)
  - Groundwater quality data
  - Progress since last review
  - Protectiveness Statement

6 4 DATA REVIEW

Data available for review for this Site consists of the previous Five Year Reviews and PRP Data Summary and Trip Reports Most of the sampling and other technical data reviewed and taken into consideration during this review was generated by the PRP s contractor

Groundwater monitoring has been conducted at the Osborne Site since the 1990s OU1 includes the on site waste materials and the groundwater in contact with those wastes OU1 was addressed by an on site containment system that included a slurry wall a multilayer cap and an extraction and treatment system to extract on site groundwater by inducing a hydraulic gradient inward toward the slurry wall In addition a monitoring system was installed and sampled periodically to evaluate the effectiveness of the containment system The performance standard for the OU1 ROD states that if the combined influent to the treatment system reaches the respective MCLs for VC trichloroethylene benzene dichloroethylene benzopyrene polychlorinated biphenyls beryllium chromium and arsenic the treatment system can be shut off As indicated in the last five year review the combined influent to the treatment plant has reached MCLs and achieved the performance standards for OU1 since 1998

OU2 is currently defined as groundwater in those portions of the Clarion Aquifer (including certain residential wells and mine void wells in the Brookville coal) the Homewood Aquifer and Connoquenessing and Burgoon aquifers located near the Site but outside of the fill area ROD2 specified that natural attenuation would be relied on to reduce the levels of VOC to levels below MCLs in the Clarion Aquifer including the mine void system north and east of the landfill ROD2 also specified that monitoring of the VOC concentrations in the Clarion Aquifer was to continue for five years after MCLs were achieved in the OU2 monitoring wells These levels have not been achieved The current activities include groundwater monitoring for VOCs in off site wells completed in the Clarion Aquifer mine void system and specific residential wells

The effectiveness of the remedy has been evaluated by

- Monitoring groundwater levels and water quality inside and outside of the slurry wall (performance wells – Clarion and Homewood aquifers C 1 through C 6 and H 1 through H 6)
- Monitoring water quality outside of the landfill by sampling off site wells in the Clarion Aquifer (MW 7 MW 8 MW 9 MWC 2 and MWC 4) the mine void system (MWV 1 MWV 3 MWV 4 MWV 5 MWV 6 MWV 7 MWV 8 and MWV 9) and residential wells
- Monitoring the constituents in the water being treated from the extraction wells (X-1 through X 9 treatment plant combined influent)
- Monitoring the treatment plant effluent after treatment

The sampled wells have been used to monitor the boundary of the plume and monitor both migration and attenuation of the contamination The RODs specified that monitoring must continue for five years after MCLs and non zero maximum contaminant level goals (MCLGs) are reached Additionally the RODs required that the Clarion and Homewood wells be sampled quarterly during the year following completion of the remedial construction twice each year until the Five Year Review and annually thereafter Currently the PRPs sample the performance wells off site monitoring wells mine void wells and one residential well on a semiannual basis Other residential wells are sampled annually Additionally the extraction wells were sampled in 2005 and 2006 following the treatment system shutdown The recent analytical results are presented in Tables 2 through 6

In addition to the sampling required for the performance wells ROD2 required sampling of a moderate number of wells in the deep aquifers of the Connoquenessing and Burgoon aquifers at the Site as part of the Natural Attenuation Remedial Action Decision These aquifers were sampled three years after the remedial action was completed and no site related contamination was detected

The results of the recent sampling events are summarized below

6 4 1 Extraction Wells

Extraction Wells X 1 through X 9 were sampled in 2005 and 2006 Sample results indicated that no site related contaminants were detected above their respective MCLs except for VC which was detected above its MCL of 2 µg/L in X 5 (4 µg/L) in February 2005 (Table 2) Influent and effluent sampling has not occurred over the last five years because the treatment system has been shut down

6 4 2 Performance Wells

According to the previous Five Year Review Report semivolatile organic compounds (SVOCs) have not been detected in the performance wells since 1997 Currently the performance wells C 1 through C 6 and H 1 through H 6 are generally sampled on a semiannual basis for VOCs The samples results from these wells indicated that the very few contaminants have been detected on the Site and only VC has exceeded its MCL over the past five years (Table 3) VC has consistently been above its MCL of 2 µg/L in wells C 2 and H 2 The most recent results from December 2009 indicate that the VC concentrations in C 2 and H 2 were 3 2 µg/L and 6 5 µg/L respectively

6 4 3 Clarion, Mine Void and Residential Wells (OU2)

During 2009 groundwater samples were collected quarterly from mine void monitoring wells MWV 4 MWV 6 MWV 7 and MWV 8 (Figure 2) Clarion Aquifer monitoring wells MW 7 MW 8 MW 9 MWC 2 and MWC 4 and mine void monitoring wells MWV 1 MWV 3 MWV 5 and MWV 9 were sampled semiannually

Residential wells were selected in the immediate vicinity of the Site and all of the residents are connected to public water system with the exception of one residence who utilizes a spring the spring was sampled

The Clarion Aquifer monitoring well data for 2009 is summarized in Table 4 No VOCs were detected at concentrations in excess of MCLs in any of the Clarion Aquifer wells in OU2 Trace levels of toluene were found in wells MW 7 MW 8 and MWC 4 during sampling events The 2009 water quality for the Clarion Aquifer is generally consistent with historical data VC has not been detected at a level equal to or above the MCL since 2003 in these wells

The mine void system data for 2009 is summarized in Table 5 VC was detected at concentrations slightly above the MCL of 2 µg/L in some mine void monitoring wells in December 2009 These wells are MWV 3 (3 µg/L) MWV 5 (3 6 µg/L) and MWV 9 (3 5 µg/L) Results from MWV 4 also showed some exceedances of VC until 2008 however more recent

results indicate that VC in this well is currently below the MCL Trace levels of cis 1 2 dichloroethene (cis 1 2 DCE) were also detected at MWV 3 MWV 4 MWV 5 and MWV 9 at concentrations below the MCLs Cis 1 2 DCE is a degradation product of TCE and it degrades to VC The presence of these degradation compounds can be seen as evidence that natural attenuation is occurring

Time trend plots show that VC concentrations at mine void wells MWV 3 MWV 4 MWV 5 and MWV 9 have either not changed or may be decreasing over time

- Concentrations at MWV 3 have ranged between nondetect and 3 3 µg/L since shutdown of the groundwater recovery system
- With the exception of 3 3 µg/L detected in June 2008 VC concentrations at MWV 4 have been below the MCL since November 2005
- Concentrations at MWV 5 ranged between 1 and 5 3 µg/L since shutdown of the groundwater recovery system with the exception of an 8 µg/L result measured in September 2005
- Concentrations at MWV 9 have been below the MCL during 6 of the last 10 sampling events

As part of the monitoring program one residential well is sampled quarterly for VOCs All detected VOC concentrations that have been reported below the quantitation limit Four additional residential wells and one residential spring were sampled during the June 2009 sampling event Only the residence with a spring is not connected to the public water system Samples from this residence showed byproducts from the chlorine disinfection of the springhouse No VOCs were detected in three of the residential well samples VC has been detected consistently in samples from the remaining residential well but concentrations have been in a downward trend from 13 µg/L in May 2002 to 7 8 µg/L in June 2009 (Table 6) The U S EPA wanted to conduct a vapor intrusion investigation at this house but this resident refused to give access for U S EPA to conduct this investigation The PRP has proposed that the treatment of the mine void water will reduce the concentrations in this well The resident with the exceedance for VC is connected to public water

6 4 4 Conclusions

VC is the only site related contaminant of concern that has been detected in the OU2 wells at concentrations above the MCL VC concentrations have historically and continue to be consistently below detection limits in samples collected from the Clarion Aquifer in off site wells During 2009 VC was detected at concentrations above the MCL of 2 µg/L in three of the mine void wells (MWV 3 MWV 5 and MWV 9) The maximum concentration was 3 6 µ/L and concentrations appear to be stable VC concentrations were below the MCL in all samples collected from the remaining mine void wells (MW 1 MWV 4 MWV 6 MWV 7 and MWV 8) during all 2009 sampling events All other detected parameters were below the MCLs in mine void wells with the exception of one toluene detection The toluene detection in MWV 8 was likely due to surface infiltration at a damaged flush mount and the well cap in question was repaired Toluene levels subsequently dropped below the MCL

With the exception of a residence that uses a spring all residential wells that are sampled are connected to public water and are sampled for monitoring purposes only Samples collected from the one residence that utilizes the spring showed byproducts from the chlorine disinfection process at the springhouse One residential well screened in the mine void consistently shows VC concentrations in the 2 µg/L to 7 µg/L range It appears that ongoing monitoring will be required for the future because natural attenuation of the VC is not reducing the VC concentrations to levels below the MCL (2 µg/L)

It is likely that the VC is not naturally attenuating because the conditions in the mine void are anaerobic and the water in the mine is generally static with no significant gradient to cause transport and dilution of the groundwater The PRP has optimized the remedy to accelerate the reduction of low levels of VC in the mine void system by using existing wells to recirculate and treat the mine void groundwater This optimization was initiated in March 2010 U S EPA will be evaluating data from this effort to determine whether the optimization is effective

6 5 SITE INSPECTION

The site visit was held on December 3 2009 Rashmi Mathur U S EPA RPM Bruce Pluta U S EPA BTAG John Morettini and Gary Mechtly PADEP Kathy Patnode USFWS Misty Kauffman HGL Project Manager Mary King CEC Project Manager and Ted Fasting and Richard Weinzerierl Cooper Cameron Site Representatives participated in the site inspection

The purpose of this site visit was to evaluate the operations and maintenance (O&M) for the Site Currently Cooper Cameron maintains the cap the treatment building vegetative growth on the Site and the chainlink fence During the site visit all of the site components were in good condition and well maintained

Mowing of the property is completed on a regular basis by the site manager The site manager also maintains the cap and controls animal burrows

No issues were identified with respect to the currently implemented O&M plan at the site The remedy appears to be effective in both the short and the long term

On March 25 2010 HGL U S EPA s contractor conducted a cap inspection During the cap inspection Chris Wolfe P E noted the following

- The cap is well vegetated and appears to be in good condition No sheens were observed in the water in the drainage ditch and the vegetation appeared to be healthy
- Mole activity was noted on the outer edges of the cap The mole activity is not expected to affect the cap because moles tend to remain within the top two feet of the ground surface

- Two groundhog burrows were noted on the outer slopes of the landfill near the drainage channel Site personnel are active in the removal of burrowing animals reducing the likelihood that they will affect the cap
- Minor areas of settling were noted at multiple locations along the western and southern portions of the cap In no case did the settling result in surface elevation decrease of more than 3 inches relative to the adjacent surface These areas of settling should be monitored to determine if there is active settling that could affect the cap
- Areas along the eastern and western portions of the cap were soggy possibly indicating that the drainage layer has been overloaded with the heavy snow and rain over the past few months These areas should be monitored over the coming months to determine of the problem is transient or represents a long term drainage issue that needs to be addressed

6 6 INTERVIEWS

U S EPA interviewed five residents in the immediate vicinity of the Osborne Site None of the residents interviewed expressed concerns or complaints regarding the Osborne Site

U S EPA interviewed three local officials including a local management official and an emergency responder The officials expressed no concerns about operation or safety at the Site and were not aware of any citizen complaints

7 0 TECHNICAL ASSESSMENT

7 1 QUESTION A IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

Yes The review of documents Applicable and Relevant or Appropriate Requirements (ARARs) risk assumptions and the results of the site inspection indicates that the remedy is functioning as intended by the RODs as modified by the ESDs The slurry wall clay cap leachate treatment system for the fill area and groundwater monitoring have achieved the remedial objectives to minimize the migration of contaminants to groundwater and surface water and prevent direct contact with or ingestion of contaminants in soil The effective implementation of institutional controls and provision of access to a public water supply have prevented exposure to or ingestion of contaminated groundwater The leachate treatment system has met the ROD objectives and was deactivated until portions of the system were started in March 2010 for the PRP s optimization efforts The treatment system will remain intact in the event it is needed in the future

Operation and maintenance of the cap the replacement wetlands leachate treatment system and the monitoring well system have been effective The U S EPA has made recommendations to improve the wetland areas

There is an opportunity for optimization of the monitored natural attenuation Recent analytical results (see Attachment 2) from the natural attenuation groundwater monitoring demonstrate that VC has remained consistently above MCLs in a few of the mine void wells and one residential well Therefore the PRP have implemented an optimization plan to pump and treat this groundwater using the existing air stripper in the leachate treatment system The optimization effort was implemented in March 2010 and the U S EPA will monitor the results of this treatment

The PRP performing the Site work purchased the landfill property so that the property would be under its control The ICs are in place to prohibit the use or disturbance of groundwater until cleanup levels are achieved and prohibitions are in place to prevent new wells from being installed on property containing the landfill The Pine Township Ordinance No 5 requires all residence within 150 feet of the water main to connect to the water main (Attachment 4) No activities were observed that would have violated the ICs The cap and the surrounding area were undisturbed and no new use of groundwater was observed The fence around the Site is intact and in good condition

7 2 QUESTION B ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND RAOS USED AT THE TIME OF THE REMEDY SELECTION STILL VALID?

7 2 1 Changes in Standards and To Be Considereds (TBCs)

Have standards identified in the ROD been revised and does this call into question the protectiveness of the remedy? Do newly promulgated standards call into question the

protectiveness of the remedy? Have TBCs used in selecting cleanup levels at the site changed and could this affect the protectiveness of the remedy?

The 2004 ESD specified that MCLs and non zero MCLGs would be achieved in groundwater Table 7 lists the performance standards from the 2004 ESD

Table 7
Performance Standards from 2004 ESD

Contaminant	Performance Standard (µg/L) from 2004 ESD
VC	2
TCE	5
Benzene	5
cis 1 2 DCE	70
Benzo(a)pyrene	2
Chromium	100
Nickel	100
Lead	5
Arsenic	50
Beryllium	4
PCBs	5

Of those listed only the arsenic MCL has changed (as was expected) The arsenic MCL of 10 µg/L is now both final and effective

The following organic chemicals were detected in groundwater in 2008 and 2009 (with MCLs shown in parentheses)

- 1 2 4 trichlorobenzene (70 µg/L)
- VC (2 µg/L)
- toluene (1 000 µg/L)
- xylenes (10 000 µg/L)
- cis 1 2 DCE (70 µg/L)
- trans 1 2 dichloroethene (trans 1 2 DCE) (100 µg/L)
- TCE (5 µg/L)
- 1 1 dichloroethane (1 1 DCA) bromodichloromethane (total trihalomethanes [THMs] 80 µg/L)
- chloroform (total THMs 80 µg/L)
- dibromochloromethane (total THMs 80 µg/L)

- 2 chlorotoluene and
- 4 chlorotoluene

Of these only VC was detected above its MCL during this time period

7 2 2 Changes in Exposure Pathways

Has land use or expected land use on or near the site changed? Have human health or ecological routes of exposure or receptors been newly identified or changed in a way that could affect the protectiveness of the remedy? Have physical site conditions or the understanding of these conditions changed in a way that could affect the protectiveness of the remedy?

Air stripper emissions have reportedly ceased for the treatment of leachate therefore this potential source is no longer relevant However the air stripper is being used temporarily to treat the mine void water

Vapor intrusion is a potential concern for one residence VC is the only site related contaminant of concern that has been detected in OU2 at concentrations above MCLs VC concentrations have historically and continue to be consistently below detection limits in samples collected from the Clarion Aquifer wells outside the fill area During 2009 VC was detected at concentrations above the MCL in three of the mine void wells (MWV 3 MWV 5 and MWV 9) Concentrations ranged only as high as 3 6 micrograms per liter (µg/L) and are stable VC has been detected consistently from May 2002 (13 µg/L) to present day (7 8 µg/L in June 2009) in one residential well that is no longer in use The U S EPA wanted to conduct a vapor intrusion investigation Subslab and indoor air sampling would be much more meaningful and reliable however the homeowner refused U S EPA access to the home to have it tested Instead a monitoring well in the shallow Clarion Aquifer near I 4 was installed in the shallow groundwater to evaluate the potential for the vapor intrusion pathway The data show that the shallow Clarion Aquifer at this location is non detect for VC so the vapor intrusion pathway is incomplete for the residence since the cleaner groundwater layer forms a barrier to the migration of vapors from the contaminated mine void water below it No other homes are located near the contamination plume However if contamination is discovered near other homes or new homes are built in the area of the plume vapor intrusion sampling should be conducted

7 2 3 Changes in Toxicity and Other Contaminant Characteristics

Are there newly identified contaminants or contaminant sources? Are there unanticipated toxic byproducts of the remedy not previously addressed by the decision documents?

Toxicity factors have changed since the original risk assessment as have risk assessment methods For example assessments of VC and benzo[a]pyrene now include an evaluation of mutagenicity and the risk assessment guides for dermal and inhalation exposure have changed

To evaluate the current and future protectiveness the following risks were considered

- Risks from current groundwater concentrations (using maximum concentrations for each groundwater area from the 2008 and 2009 data)
- Risks at MCLs
- Water quality in the Burgoon and Connoquenessing aquifers
- Risks from unremediated sediment

As shown in Attachment 3 the slurry wall and mine void wells have not yet met MCLs for VC and the mine void does not meet the toluene MCL These same chemicals drive unacceptable risk (HI>1 and/or cancer risk >1e 4) in those locations Residential well E previously identified in site documents as having unacceptable risk and no longer used as a source of drinking water still has VC at concentrations above the MCL and acceptable cancer risk levels

The other residential wells and the Clarion wells in OU2 meet MCLs and acceptable risk based standards

If the detected chemicals were present at their respective MCLs risks would be unacceptable from the combination of VC xylenes 1 2 4 TCB THMs and toluene Therefore the full suite of MCLs is not protective in combination At this time only VC exceeds its MCL

Monitoring of the Burgoon and Connoquenessing aquifers has reportedly ceased because these areas appear to have achieved the required cleanup levels The most recent data were included in the 2005 Five Year Review and these have been reviewed to ensure that this conclusion would still hold despite any changes in toxicity factors or risk assessment methods This review confirmed that the Burgoon and Connoquenessing contaminant concentrations fall below MCLs and risk levels of concern

Soils and sediments listed in the ROD have been excavated or capped with the exception of the off site pond sediment However the contaminant concentrations in the sediment from this pond are still below levels of concern

7 2 4 Changes in Risk Assessment Methods

Have standardized risk assessment methodologies changed in a way that could affect the protectiveness of the remedy?

There have been significant changes in U S EPA s risk assessment guidance since the original risk assessment was performed for the RODs These include changes in basic methodology dermal guidance inhalation methodologies and exposure factors Uncertainties involving the risks associated with final cleanup standards were included above as part of the Changes in Standards and TBCs discussion

7 2 5 Expected Progress towards Meeting RAOs

Is the remedy progressing as expected?

With respect to the Burgoon and Connoquenessing aquifers the Clarion monitoring wells outside the slurry wall and the soil and sediment acceptable risk levels have been achieved This is also true of all the sampled residential wells except one and that one is no longer in use

The slurry wall mine void and extraction wells show that there are still groundwater contaminants present at concentrations above MCLs and risk levels of concern These wells are not currently used as potable or non potable supplies and therefore these conditions are currently protective

With respect to vapor intrusion the remedy is protective

With respect to human health issues the following items are recommended as described above

- Evaluate local vapor intrusion periodically by monitoring the new well drilled into the Clarion Aquifer
- Maintain containment systems ICs and monitoring

7 3 QUESTION C HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

No According to the data reviewed and the site inspection and the remedy is functioning as intended by the RODs as modified by the ESDs There have been no changes in the physical condition of the Site that would affect the protectiveness of the remedy As a result of the cap slurry wall containment and leachate treatment system levels of COCs in site groundwater have decreased consistently since the last Five Year Review although groundwater performance standards for VC have not yet been met at some well locations An optimization plan has been implemented to speed the decline of site related contaminants in these locations The slurry wall and cap containment with long term groundwater monitoring appears to be protective

8 0 ISSUES

Table 8 summarizes issues identified for the Site

Table 8
Summary of Site specific Issues

Issue	Currently Affects Protectiveness (Yes/No)	Affects Future Protectiveness (Yes/No)
Wetland mitigation area adjacent to the western boundary of the Site does not appear to be performing as anticipated	No	No
The groundwater data indicate that VC contamination is still detected above its performance standard in some of the mine void wells and one residential well which are part of OU2	No	No
Areas of settling and sogginess were observed during the cap inspection	No	No

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9 0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Issue	Recommendations and Follow up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
1 Wetland mitigation area adjacent to the western boundary of the Site does not appear to be performing as anticipated	1 Simple modifications should be made to the drainage swale to facilitate moving the water from the Site cap and swale to the mitigation wetland and specifically the area of the intended wetland that is not adequately saturated Mowing of the area adjacent to the stream that runs along eastern/northeastern side of the Site (adjacent to the treatment building) should be modified to allow more of a buffer Mowing should not be performed within ten feet of the top of the slope along this drainage feature	Cooper Cameron Responsible Party	EPA	September 2011	N	N
2 The groundwater data indicate that VC contamination is still detected above its performance standard in some of the mine void wells and one residential well which are part of OU2	2 Monitoring of volatile organic contaminants (VOC s) in the groundwater in OU2 will continue until the performance standards are achieved The PRP has implemented an optimization study to speed the natural attenuation of vinyl chloride in these wells The U S EPA will continue to evaluate the data and recommend any changes based on the optimization plan for OU2 groundwater If the optimization plan is successful the EPA will issue a decision document	Cooper Cameron Responsible Party	EPA	September 2015	N	N
3 Areas of settling and sogginess were observed during the cap inspection	3 These areas of settling should be monitored to determine whether there is active settling that could affect the cap The soggy areas should be monitored over the coming months to determine of the problem is transient or represents a long term drainage issue that needs to be addressed	Cooper Cameron Responsible Party	EPA	Ongoing as part of O&M of the Site	N	N

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10 0 PROTECTIVENESS STATEMENT

OU1

Based on currently available data the remedies constructed for OU1 appear to be protective of human health and the environment The constructed remedies for OU1 include landfill leachate collection system the landfill cap and slurry wall groundwater monitoring and the ICs and are functioning as intended The remedies prevent contamination from leaving the Site minimize migration of contaminants to groundwater and surface water and prevent direct contact with or ingestion of contaminants ICs in place for OU1 include all necessary ICs for the entire Site

OU2

Based on currently available data the remedies in place for OU2 appear to be protective of human health and the environment Natural attenuation with groundwater monitoring of VOCs was selected as the remedy Additionally ICs in place as part of OU1 prevent the use of the contaminated groundwater as a drinking water supply Recent analytical results indicate that performance standards have been achieved for all but three mine void wells and one residential well and an optimization plan has been approved by the EPA and implemented by the PRP to speed the natural attenuation of contaminants at the Site A vapor intrusion investigation was conducted near the residence of concern and vapor intrusion was ruled out as a concern for the Site given the current conditions

Overall Protectiveness

Based on currently available data the remedies constructed for the Site remain protective of human health and the environment in the short term and long term The remedies are functioning as intended and no exposure pathways appear to exist

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11 0 NEXT REVIEW

The next Five Year Review is required within five years of the completion of this Five Year Review report The completion date is the date of the signature on the cover of this report

ATTACHMENT 1

SITE INSPECTION FORMS

Attachment 1
Site Inspection Checklist

I SITE INFORMATION	
Site name Osborne Landfill Superfund Site	**Date of inspection**
Location and Region Grove City Mercer County	**U S EPA ID** PAD980712673
Agency office or company leading the five year review USEPA Region 3	**Weather/temperature** Overcast 30 degrees

Remedy Includes (Check all that apply)

☒ Landfill cover/containment ☒ Monitored natural attenuation
☒ Access controls ☒ Groundwater containment
☒ Institutional controls ☒ Vertical barrier walls
☒ Groundwater pump and treatment
☐ Surface water collection and treatment
☐ Other

Attachments ☒ Inspection team roster attached ☒ Site map attached

II INTERVIEWS (Check all that apply)

1 **O&M site manager** Richard Weinzierl (Name) Cooper Cameron Site Manager (Title) 12/03/2010 (Date)

Interviewed ☒ at site ☐ at office ☐ by phone Phone no 724 992 8787

Problems suggestions ☐ Report Attached No issues at this time O&M Site work includes the inspection of the chain link fence surrounding the Site and maintenance of the vegetative growth on Site (i e mowing) and maintenance of cap

2 **O&M staff** Richard Weinzierl (Name) Cooper Cameron Site Manager (Title) 12/03/2010 (Date)

Interviewed ☒ at site ☐ at office ☐ by phone Phone no _____

Problems suggestions ☐ Report attached No issues at this time

3 **Local regulatory authorities and response agencies** (i e State and Tribal offices emergency response office police department office of public health or environmental health zoning office recorder of deeds or other city and county offices etc) Fill in all that apply

Agency U S Environmental Protection Agency

Contact Rashmi Mathur (Name) Remedial Project Manager (Title) 12/03/2010 (Date) 215 814 5234 (Phone no)

Problems suggestions Report attached ☐ No current issues at this time

Agency Pennsylvania Department of Environmental Protection

Contact Gary Mechtly (Name) PADEP Environmental Cleanup Division (Title) 12/03/2010 (Date) 814 332 6648 (Phone no)

Problems suggestions Report attached ☐ __No issues reported

Agency

Contact
Name Title Date Phone no

Problems suggestions ■ Report attached ☐ _____

Agency _____

Contact _____ _____ _____ _____
Name Title Date Phone no

Problems suggestions ■ Report attached ☐ _____

4 **Other interviews** (optional) ☐ Report attached

See the Community Involvement portion of the Five Year Review

III ON SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1	**O&M Documents**			
	☒O&M manual	☒ Readily available	☒ Up to date	☐ N/A
	☒ As built drawings	☒ Readily available	☒ Up to date	☐ N/A
	☒ Maintenance logs	☒ Readily available	☒ Up to date	☐ N/A
	Remarks			
2	**Site-Specific Health and Safety Plan**	☒ Readily available	☒ Up to date	☐ N/A
	☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☐ N/A
	Remarks			
3	**O&M and OSHA Training Records**	☐ Readily available	☐ Up to date	☐ N/A
	Remarks OSHA training records were not requested during the site visit			
4	**Permits and Service Agreements**			
	Air discharge permit	☐ Readily available	☐Up to date	☒ N/A
	Effluent discharge	☐ Readily available	☐Up to date	☒ N/A
	Waste disposal POTW	☐ Readily available	☐Up to date	☒ N/A
	Other permits	☐ Readily available	☐Up to date	☒ N/A
	Remarks The leachate treatment system is currently shut down so no records were requested during the site visit			
5	**Gas Generation Records**	☐ Readily available	☐Up to date	☒ N/A
	Remarks			
6	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
7	**Groundwater Monitoring Records**	☒ Readily available	☒ Up to date	☐ N/A
	Remarks			
8	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
9	**Discharge Compliance Records**			
	Air	☐ Readily available	☐ Up to date	☒ N/A
	Water (effluent)	☐Readily available	☐ Up to date	☒ N/A
	Remarks			
10	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			

IV O&M COSTS

1 **O&M Organization**

☐ State in house ☐ Contractor for State
☒ PRP in house ☒ Contractor for PRP
☐ Federal Facility in house ☐ Contractor for Federal Facility
☐ Other _____

2 **O&M Cost Records**

☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Breakdown attached No

Total annual cost by year for review period if available

From _____ To _____ _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ _____ ☐ Breakdown attached
Date Date Total cost

From _____ To _____ _____ ☐ Breakdown attached
Date Date Total cost

3 **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons None

V ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A Fencing

1 **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks The fence inspection showed no breaks or breaches in the Site fencing

B Other Access Restrictions

1 **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks All signage was legible and are currently placed at the front gate of the Site

C In stitutional Controls (ICs)

1 **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e g* self reporting drive by) Self reporting site inspection, groundwater sampling
Frequency Semiannual sampling,
Responsible party/agency USEPA
Contact Rashmi Mathur (Name) Remedial Project Manager (Title) 215 814 5234 (Date / Phone no)

Reporting is up to date ☒ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☐ No ☒ N/A
Other problems or suggestions ☐Report attached

2 **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks

D General

1 **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident
Remarks

2 **Land use changes on site** ☐ N/A
Remarks No land use changes are anticipated

3 **Land use changes off site** ☐ N/A
Remarks Development is possible but not anticipated in the future adjacent to or in the vicinity of the Site This development could have implications on site security

VI GENERAL SITE CONDITIONS

A Roads ☒ Applicable ☐ N/A

1 **Roads damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A
Remarks

B Other Site Conditions

Remarks _____

VII LANDFILL COVERS ☒ Applicable ☐ N/A

A Landfill Surface

1 **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_less than 3 inches_____
Remarks Some minor areas of settling were observed along the western and southern portions of the cap It is recommended that the cap be monitored for settling that could affect the function of the cap

2 **Cracks** ☐ Location shown on site map ☒ Cracking not evident
Lengths_____ Widths_____ Depths_____
Remarks _____

3 **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Areal extent_____ Depth_____
Remarks _____

4 **Holes** ☐ Location shown on site map ☐ Holes not evident
Areal extent_____ Depth_____
Remarks Animal burrows were observed The PRP actively removes animals and fills burrows which should control any potential problems with the burrows

5 **Vegetative Cover** ☐ Grass ☒ Cover properly established ☒ No signs of stress
☐ Trees/Shrubs (indicate size and locations on a diagram)
Remarks _____

6 **Alternative Cover (armored rock concrete etc)** ☒ N/A
Remarks _____

7 **Bulges** ☐ Location shown on site map ☒ Bulges not evident
Areal extent_____ Height_____
Remarks _____

8	**Wet Areas/Water Damage**	☐ Wet areas/water damage not evident
	☒ Wet areas	☐ Location shown on site map Areal extent_____
	☐ Ponding	☐ Location shown on site map Areal extent_____
	☐ Seeps	☐ Location shown on site map Areal extent_____
	☐ Soft subgrade	☐ Location shown on site map Areal extent_____
	Remarks Some wet areas were observed along the eastern and western portions of the site during the cap inspection These areas may be due to heavy rains and snow and should be monitored to determine if they are a persistent problem	
9	**Slope Instability** ☐ Slides	☐ Location shown on site map ☒ No evidence of slope instability
	Areal extent_____	
	Remarks _____	
B	**Benches** ☐ Applicable ☒ N/A	
	(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel)	
1	**Flows Bypass Bench**	☐ Location shown on site map ☒ N/A or okay
	Remarks _____	
2	**Bench Breached**	☐ Location shown on site map ☒ N/A or okay
	Remarks _____	
3	**Bench Overtopped**	☐ Location shown on site map ☒ N/A or okay
	Remarks _____	
C	**Letdown Channels** ☐ Applicable ☒ N/A	
	(Channel lined with erosion control mats riprap grout bags or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies)	
1	**Settlement**	☐ Location shown on site map ☐ No evidence of settlement
	Areal extent_____	Depth_____
	Remarks _____	
2	**Material Degradation**	☐ Location shown on site map ☐ No evidence of degradation
	Material type_____	Areal extent_____
	Remarks _____	
3	**Erosion**	☐ Location shown on site map ☐ No evidence of erosion
	Areal extent_____	Depth_____
	Remarks _____	

4 **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks _____

5 **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks _____

6 **Excessive Vegetative Growth** Type_____
☒ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks _____

D Cover Penetrations ☒ Applicable ☐ N/A

1 **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☒ N/A
Remarks _____

2 **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks _____

3 **Monitoring Wells** (within surface area of landfill)
☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks _____

4 **Leachate Extraction Wells**
☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks _____

5 **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☒ N/A
Remarks _____

E Gas Collection and Treatment ☐ Applicable ☒ N/A

1 **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance ☒ N/A
Remarks _____

2 **Gas Collection Wells Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance ☒ N/A
Remarks _____

3 **Gas Monitoring Facilities** (*e g* gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☒ N/A
Remarks _____

F Cover Drainage Layer ☒ Applicable ☐ N/A

1 **Outlet Pipes Inspected** ☒ Functioning ☐ N/A
Remarks _____

2 **Outlet Rock Inspected** ☐ Functioning ☒ N/A
Remarks _____

G Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1 **Siltation** Areal extent_____ Depth_____ ☒ N/A
☐ Siltation not evident
Remarks _____

2 **Erosion** Areal extent_____ Depth_____ ☒ N/A
☐ Erosion not evident
Remarks _____

3 **Outlet Works** ☐ Functioning ☒ N/A
Remarks _____

4 **Dam** ☐ Functioning ☒ N/A
Remarks _____

H Retaining Walls ☐ Applicable ☒ N/A

1 **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement_____ Vertical displacement_____
Rotational displacement_____
Remarks _____

2 **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks _____

I Perimeter Ditches/Off Site Discharge ☒ Applicable ☐ N/A

1 **Siltation** ☐ Location shown on site map ☒ Siltation not evident
Areal extent_____ Depth_____
Remarks _____

2 **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☒ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks _____

3 **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Areal extent_____ Depth_____
Remarks _____

4 **Discharge Structure** ☒ Functioning ☐ N/A
Remarks _____

VIII VERTICAL BARRIER WALLS ☒ Applicable ☐ N/A

1 **Settlement** ☐ Location shown on site map ☒ Settlement not evident
Areal extent_____ Depth_____
Remarks _____

2 **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored
Frequency_____ ☐ Evidence of breaching
Head differential_____
Remarks _____

C Treatment System ☒ Applicable ☐ N/A

1 **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☒ Air stripping ☐ Carbon adsorbers
☒ Filters
☐ Additive (e g chelation agent flocculent)
☐ Others Surface/seep water collection trench system with storage tank
☒ Good condition ☐ Needs Maintenance
☒ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually N/A system shut down X
☐ Quantity of surface water treated annually
Remarks The leachate system is currently shutdown because the performance standards have been met The air strippers are being used as part of the optimization for the mine void which was started in March 2010

2 **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☒ Good condition ☐ Needs Maintenance
Remarks

3 **Tanks Vaults Storage Vessels**
☐ N/A ☒ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4 **Discharge Structure and Appurtenances**
☐ N/A ☒ Good condition ☐ Needs Maintenance
Remarks

5 **Treatment Building(s)**
☐ N/A ☒ Good condition (esp roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6 **Monitoring Wells** (pump and treatment remedy)
☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition
☒ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks Monitoring well 5 was abandoned and was located outside the Site fencing

D Monitoring Data

1 Monitoring Data
☒ Is routinely submitted on time ☒ Is of acceptable quality

2 Monitoring data suggests
☒ Groundwater plume is effectively contained ☐ Contaminant concentrations are not consistently declining

E	**Monitored Natural Attenuation**
1	**Monitoring Wells** (natural attenuation remedy) ☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition ☒ All required wells located ☐ Needs Maintenance ☐ N/A Remarks _____

IX OTHER REMEDIES

If there are remedies applied at the site which are not covered above attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy An example would be soil vapor extraction

X OVERALL OBSERVATIONS

A Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed Begin with a brief statement of what the remedy is to accomplish (i e to contain contaminant plume minimize infiltration and gas emission etc)

The remedy is functioning well and is protective of human health

B Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures In particular discuss their relationship to the current and long term protectiveness of the remedy

No issues were identified with respect to the currently implemented O&M at the Site The remedy appears to be effective in both the short and the long term

C Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future

No indications of potential issues with the remedy were observed

D Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy Currently the RPs are optimizing the mine void natural attenuation by pumping the mine void water through the air strippers to remove VC and then reinjecting the water back in to the mine void system The U S EPA will monitor the results of this optimization

ATTACHMENT 2

ANALYTICAL RESULTS TABLES

Table 2
Osborne Five Year Review Data Summary
Extraction Wells

VOC (µg/L)	MCL	X1					X2			
		2/16/2005	4/22/2005	6/23/2005	11/17/2005	6/22/2006	2/16/2005	6/23/2005	11/17/2005	6/22/2006
Acetone	NA	7	<5	<5	9	NA	<5	<5	<5	NA
Benzo(a)pyrene	0 2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA						< 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5

VOC (µg/L)	MCL	X3				X4				
		2/16/2005	6/23/2005	11/17/2005	6/22/2006	2/16/2005	4/22/2005	6/23/2005	11/17/2005	6/22/2006
Acetone	NA	<5	<5	6	NA	<5	<5	<5	8	NA
Benzo(a)pyrene	0 2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA									
Cis 1 2 Dichloroethene	70	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5
VC	2	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5

VOC (µg/L)	MCL	X5					X6				
		2/16/2005	4/21/2005	6/23/2005	11/17/2005	6/22/2006	2/16/2005	4/22/2005	6/23/2005	11/17/2005	6/22/2006
Acetone	NA	<5	<5	<5	5	NA	<5	6	<5	6	NA
Benzo(a)pyrene	0 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	4J	<0 5	1	1 3	0 41J	< 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	< 5	<0 5	<0 5	<0 5	<0 5					
Cis 1 2 Dichloroethene	70	0 8	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	100	4J	<0 5	1	0 6	0 23	< 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	< 5	<0 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5
VC	2	4	1	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5

Table 2 (continued)
Osborne Five Year Review Data Summary
Extraction Wells

VOC (µg/L)	MCL	X7				X8				X9			
		2/16/2005	6/23/2005	11/17/2005	6/22/2006	2/16/2005	6/23/2005	11/17/2005	6/22/2006	2/16/2005	6/23/2005	11/17/2005	6/22/2006
Acetone	NA									12	<5	17	NA
Benzo(a)pyrene	0 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA												
Cis 1 2 Dichloroethene	70	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	100												
Trichloroethene	5	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	< 5	<0 5	<0 5	<0 5	< 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C1									
		2/15/2005	6/24/2005	11/16/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	0 16 JB	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C1 (continued)									
		2/15/2005	6/24/2005	11/16/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 56	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	0 29J	<0 5	0 31 J	<0 5	<0 5	0 45 J
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C2										
		2/15/2005	4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5					NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5					<0 5	<0 5	0 10 JB	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5					NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<5	<0 5	<0 5	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<5	<0 5	<0 5	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<5	<0 5	<0 5	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	2	2	1	1 3	1 1	0 54	1 1	0 53	0 64	0 63	0 75
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C2 (continued)										
		2/15/2005	4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5										
sec Butylbenzene	NA	<0 5										
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5										
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	0 25	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5				<0 5	<0 5					
VC	2	**6**	**6**	**5**	**6 5**	**3 3**	1 3	**5 6**	1 1	**3 2**	1 7	**7 5**
o Xylene									<0 5	<0 5	<0 5	<0 5
m p Xylene									<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C3									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	0 11 JB	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C3 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C4									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5									
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C4 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 37	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C5									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C5 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<1	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C6										
		2/15/2005	4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5					NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5					NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<0 5	<1 0	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<0 5	0 42	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC (µg/L)	MCL	C6 (continued)										
		2/15/2005	4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5										
sec Butylbenzene	NA	<0 5										
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5										
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	0 27	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5										
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene									<0 5	<0 5	<0 5	<0 5
m p Xylene									<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<1	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H1								
		2/15/2005	6/24/2005	11/16/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	NA	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H1 (continued)								
		2/15/2005	6/24/2005	11/16/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5								
sec Butylbenzene	NA	<0 5								
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5								
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 41J	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	0 41J	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5								
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H2									
		4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA				<0 5	NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA				<0 5	NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	1	<0 5	0 7	0 95	0 75	0 88	1 1	0 86	0 9
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H2 (continued)									
		4/20/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/15/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA										
sec Butylbenzene	NA										
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA										
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA										
VC	2	**4**	**11**	<0 5	**37**	**39**	**41**	**56**	**44**	**49**	**65**
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<1	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H3									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	NA	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H3 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 25	<0 5	<0 5	<0 5	<0 5	0 26 J	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H4									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H4 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H5									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5				NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5				<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5				NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	NA	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H5 (continued)									
		2/15/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5									
sec Butylbenzene	NA	<0 5									
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5									
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 28J	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5									
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene								<0 5	<0 5	<0 5	<0 5
m p Xylene								<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H6										
		2/15/2005	4/21/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
1 1 Dichloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 3 Trichlorobenzene	NA	<0 5					NA	NA	NA	NA	NA	NA
1 2 4 Trichlorobenzene	NA	<0 5					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dibromoethane	NA	<0 5					NA	NA	NA	NA	NA	NA
2 Butanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
2 Hexanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
4 Methyl 2 pentanone	none	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Acetone	NA	<5	<5	<5	<5	<0 5	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	none	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	none	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	none	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
cis 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dibromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorodifluoromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA

Table 3 (continued)
Osborne Five Year Review Data Summary
Performance Wells

VOC	MCL	H6 (continued)										
		2/15/2005	4/21/2005	6/24/2005	11/15/2005	6/21/2006	8/7/2007	11/14/2007	6/10/2008	10/29/2008	6/9/2009	12/15/2009
Ethylbenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
p Cymene	NA	<0 5										
sec Butylbenzene	NA	<0 5										
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
tert Butylbenzene	NA	<0 5										
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	0 35J	<0 5	<0 5	<0 5	<0 5	1 1	<0 5
trans 1 2 Dichloroethene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
trans 1 3 Dichloropropene	none	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichlorofluoromethane	NA	<0 5										
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene									<0 5	<0 5	<0 5	<0 5
m p Xylene									<0 5	<0 5	<0 5	<0 5
Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 4
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MW 7										
		2/17/2005	9/20/2005	6/20/2006	12/12/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µ/L)	MCL	MW 7 (continued)										
		2/17/2005	9/20/2005	6/20/2006	12/12/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	1	0 77	<0 5	<0 5	<0 5	<0 5	<0 5	0 53	0 7	1 7
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µ/L)	MCL	MW-8											
		2/17/2005	4/23/2005	9/20/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA						<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µ/L)	MCL	MW-8 (continued)											
		2/17/2005	4/23/2005	9/20/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 23J	<0 5	0 62	<0 5	0 65	1
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 12 J	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MW 9											
		2/17/2005	4/23/2005	9/19/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA						<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	1 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	1 6	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Dichlorobromomethane (a k a.Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MW 9 (continued)											
		2/17/2005	4/23/2005	9/19/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 59	<0 5	<0 5	<0 5	<0 5	0 51	0 د1 J	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MWC 2										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MWC 2 (continued)										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	1	0 22J	<0 5	0 22J	0 27J	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	0 59	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MWC-4										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a.Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 4 (continued)
Osborne Five Year Review Data Summary
Clarion Wells

VOC (µg/L)	MCL	MWC 4										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	1	0 38J	<0 5	<0 5	<0 5	<0 5	0 72	0 30 J	0 74	0 71
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 42 J	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 1										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	0 11 J	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a.k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	1	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 1 (continued)										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/16/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	1	0 45J	<0 5	<0 5	<0 5	<0 5	0 40 J	0 59	0 54	0 91
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 48 J	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	2 4	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 3										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1	<1	<1	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1	<1	<1	<1	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	1	<0 5	0 82	0 81	0 71	0 7	0 62	0 61	0 55	0 57	0 48 J
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 3 (continued)										
		2/17/2005	9/19/2005	6/20/2006	12/13/2006	6/21/2007	8/8/2007	2/28/2008	6/9/2008	10/30/2008	6/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	1	0 41 J	<0 5	<0 5	<0 5	<0 5	0 34 J	0 28 J	0 41 J	0 64
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	**3**	2	**2 4**	**2 8**	<0 5	**2 8**	**2 3**	**3.3**	**2 9**	1 8	**3**
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 4									
		2/17/2005	5/2/2005	9/19/2005	11/18/2005	3/23/2006	6/20/2006	9/21/2006	12/13/2006	3/14/2007	6/20/2007
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 25 J	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 24J	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA										
2 Butanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 86	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	1	1	1 J	<0 5	0 52	0 61	0 49J	0 56	0 65	0 55
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 4 (continued)									
		2/17/2005	5/2/2005	9/19/2005	11/18/2005	3/23/2006	6/20/2006	9/21/2006	12/13/2006	3/14/2007	6/20/2007
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	0 2ɔ J	0 37J	0 20J	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	**3**	**3**	2	**2 4**	1 3	1 3	1 5	1 6	1 9	1 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 4 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	0 27 J	0 30 J	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	0 51	0 43J	0 50J	0 65	0 58	0 46 J	0 53	0 56	0 49 J	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 4 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	0 23J	<0 5	0 35 J	3 6	0 23 J	<0 5	0 57 J	0 39 J	0 75
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	1 7	<0 5	1 4	3 3	1 5	1 6	<0 5	1 4	1 9	1 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highli hted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 5											
		2/17/2005	4/23/2005	9/19/2005	6/20/2006	12/12/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/31/2008	6/11/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA						<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	1	1	1	0 97	1 3	0 89	1 1	0 93	0 79	1 3	0 98	1 2
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MW 5 (continued)											
		2/17/2005	4/23/2005	9/19/2005	6/20/2006	12/12/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/31/2008	6/11/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	1	0 34J	<0 5	<0 5	0 22J	<0 5	0 50 J	0 6	0 54	0 49 J
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 35 J	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	1	1	**8**	2	**2 8**	**2 8**	**5**	**2 2**	**2 7**	**5 3**	**2 9**	**3 6**
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV-6									
		2/17/2005	5/2/2005	9/19/2005	11/17/2005	3/23/2006	6/23/2006	9/20/2006	12/13/2006	3/14/2007	6/20/2007
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA										
2 Butanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 6 (continued)									
		2/17/2005	5/2/2005	9/19/2005	11/17/2005	3/23/2006	6/23/2006	9/20/2006	12/13/2006	3/14/2007	6/20/2007
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	1 J	<0 5	<0 5	0 41J	0 23J	0 21J	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV-6 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/16/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 50	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 6 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/16/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	0 28J	<0 5	0 33 J	9 6	0 42 J	0 23 J	0 47 J	0 52	0 82
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 7									
		2/17/2005	5/2/2005	9/19/2005	11/18/2005	3/23/2006	6/23/2006	9/21/2006	12/14/2006	3/14/2007	6/21/2007
1 1 1 Trichloroethane	200	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 55	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA										
2 Butanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 55	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 55	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 55	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	0 71	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 7 (continued)									
		2/17/2005	5/2/2005	9/19/2005	11/18/2005	3/23/2006	6/23/2006	9/21/2006	12/14/2006	3/14/2007	6/21/2007
Tetrachloroethene	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 55	1 J	<0 5	<0 5	0 35J	0 21J	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 55	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 7 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 7 (continued)									
		8/6/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/30/2008	2/17/2009	6/10/2009	9/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	0 66	7 8	0 42 J	<0 50	0 41 J	0 39 J	0 78
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 8										
		2/17/2005	5/2/2005	9/19/2005	11/17/2005	11/18/2005	3/23/2006	6/23/2006	9/20/2006	12/14/2006	3/14/2007	6/21/2007
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA											
2 Butanone	NA	<5 0	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	<5 0	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	<5 0	2 J	<5 0	<5 0	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	<0 5	<0 5	<0 5	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 8 (continued)										
		2/17/2005	5/2/2005	9/19/2005	11/17/2005	11/18/2005	3/23/2006	6/23/2006	9/20/2006	12/14/2006	3/14/2007	6/21/2007
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 20J	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 8 (continued)									
		8/8/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/31/2008	2/17/2009	6/11/2009	9/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<1 0	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<10	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<10	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 8 (continued)									
		8/8/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008	10/31/2008	2/17/2009	6/11/2009	9/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	1د	92 E/ 110D	**250E/2200D**	460E/630D	6د	26	2 1
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	0 35 J	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 9										
		2/17/2005	9/19/2005	6/23/2006	12/14/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/31/2008	6/10/2009	12/17/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA					<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a.Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<1 0
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	1	<0 5	0 34J	0 34J	0 35J	0 30J	<0 5	<0 5	0 28 J	<0 5	0 44 J
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 5 (continued)
Osborne Five Year Review Data Summary
Mine Void Wells

VOC (µg/L)	MCL	MWV 9 (continued)										
		2/17/2005	9/19/2005	6/23/2006	12/14/2006	6/20/2007	8/6/2007	2/28/2008	6/9/2008	10/31/2008	6/10/2009	12/17/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	0 31J	0 31J	<0 5	<0 5	<0 5	0 37 J	0 42 J	0 44 J	0 71
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	**4**	<0 5	1 6	**2 3**	**2.2**	**2 1**	1 1	0 85	1 1	1 1	**3.5**
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 6
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	K/K											
		9/20/2005	11/17/2005	3/23/2006	9/20/2006	12/14/2006	3/14/2007	6/21/2007	8/8/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA								<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	208	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<0 5	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	1 6 B	<0 5	0 83	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	K/K (continued)											
		9/20/2005	11/17/2005	3/23/2006	9/20/2006	12/14/2006	3/14/2007	6/21/2007	8/8/2007	11/13/2007	2/28/2008	6/9/2008	8/14/2008
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	K/K (continued)					E						
		10/29/2008	2/17/2009	6/9/2009	9/10/2009	12/15/2009	4/23/2005	11/18/2005	6/22/2006	9/21/2006	11/15/2007	10/31/2008	6/11/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	NA	<0 5	<0 5	<0 5	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA	<0 5	<0 5	<0 5	<0 5	<0 5					<0 5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	NA	<5 0	<5 0	<0 5	NA	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	NA	<5 0	<5 0	<0 5	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	NA	<5 0	<5 0	<0 5	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	<5 0	<5 0	<0 5	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<1 0	<1 0	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<0 5	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	<0 5	<0 5	<0 5	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<1 0	<0 5	<0 5	<1 0	<1 0	<0 5	<0 5	<0 5
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 73	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	1	1 1	1 1	1 2	1 1	1 2	0 85
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0.5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	1 6 B	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	K/K (continued)					E (continued)						
		10/29/2008	2/17/2009	6/9/2009	9/10/2009	12/15/2009	4/23/2005	11/18/2005	6/22/2006	9/21/2006	11/15/2007	10/31/2008	6/11/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 23J	<0 5	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	0 46 J	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	9	8 6	5 5	6	5 2	7 4	7 8
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	D/D/C					G				
		11/18/2005	9/20/2006	11/13/2007	10/31/2008	6/11/2009	9/20/2006 well	9/20/2006 spring	11/13/2007 spring	10/31/2008 spring	6/9/2009 spring
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA			<0 5	<0 5	<0 5			<0 5	<0 5	<0 5
2 Butanone	NA	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Hexanone	NA	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Methyl 2 Pentanone	NA	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	<5 0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	1 2
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Carbon Disulfide	NA	<0 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<0 5	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	5 4	7 8
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	0 65	<0 5	<0 5	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 46 J
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	D/D/C (continued)					G (continued)				
		11/18/2005	9/20/2006	11/13/2007	10/31/2008	6/11/2009	9/20/2006 well	9/20/2006 spring	11/13/2007 spring	10/31/2008 spring	6/9/2009 spring
Methylene Chloride	5	1 3 B	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	0 76
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	3 6
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	1 2

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	RL				PE			
		9/20/2006	11/13/2007	10/31/2008	6/9/2009	11/18/2005	9/20/2006	10/31/2008	6/11/2009
1 1 1 Trichloroethane	200	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 2 Tetrachloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 2 Trichloroethane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 1 Dichloroethene	7	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 Dichloroethane	5	NA	NA	NA	NA	<0 5	NA	NA	NA
1 2 Dichloropropane	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
1 2 4 Trichlorobenzene	NA		<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Butanone	NA	NA	NA	NA	NA	<5 0	NA	NA	NA
2 Hexanone	NA	NA	NA	NA	NA	<5 0	NA	NA	NA
4 Methyl 2 Pentanone	NA	NA	NA	NA	NA	<5 0	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	42	NA	NA	NA
Benzene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Dichlorobromomethane (a k a Bromodichloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromoform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Bromomethane	NA	<1 0	<1 0	<1 0	<1 0	<0 5	<1 0	<1 0	<1 0
Carbon Disulfide	NA	NA	NA	NA	NA	<0 5	NA	NA	NA
Carbon Tetrachloride	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorobenzene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloroethane	NA	<1 0	<1 0	<1 0	<1 0	<0 5	<1 0	<1 0	<1 0
Chloroform	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chloromethane	NA	<0 5	<0 5	<0 5	<0 5	<0 5	1 3	<0 5	<0 5
Cis 1 2 Dichloroethene	70	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Cis 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Chlorodibromomethane (Dibromochloromethane)	80	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Ethlybenzene	700	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Methylene Chloride	5	<0 5	<0 5	<0 5	<0 5	1 4 B	<0 5	<0 5	<0 5
Styrene	100	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

Table 6 (continued)
Osborne Five Year Review Data Summary
Residential Wells

VOC (µg/L)	MCL	R L (continued)				P E (continued)			
		9/20/2006	11/13/2007	10/31/2008	6/9/2009	11/18/2005	9/20/2006	10/31/2008	6/11/2009
Tetrachloroethene	5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Toluene	1000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
o Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
m p Xylene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Total Xylenes	10000	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 2 Dichloroethene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trans 1 3 Dichloropropene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
Trichloroethene	5	<0 5	<0 5	<0 5	0 44 J	<0 5	<0 5	<0 5	<0 5
VC	2	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
2 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5
4 Chlorotoluene	NA	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5	<0 5

VOC volatile organic compound
µg/L microgram per liter
MCL Maximum contaminant level
NA not applicable/not sampled
Highlighted cell indicate that the concentration exceeds its MCL value

ATTACHMENT 3

CURRENT GROUNWATER RISKS

Current Groundwater Risks

The 2008 09 well data were divided as follows

Slurry wall C 1 C 2 C 3 C 4 C 5 C 6 H 1 H 2 H 3 H 4 H 5 H 6
Clarion outside MW 7 MW 8 MW 9 MWC 2 MWC 4
Mine void MWV 1 MWV 3 MWV 4 MWV 5 MWV 6 MWV 7 MWV 8 MWV 9
Residential wells (evaluated individually) K/K E D/D/C G R L P E

The maximum concentration of each detected chemical in each grouping was entered into a risk assessment along with the chemical specific inputs listed below For the MCL evaluation the risk at the MCL was estimated for each of the chemicals detected in these wells

	Kp	B	tau	t*	MW	H	RfD	CSF	RfC	IUR
124 TCB	0 066	0 3	1 11	2 66	181 5	0 0014	0 01	0 029	0 002	
VC	0 0056	0 002	0 24	0 57	62 5	0 028	0 003	0 72	0 1	4 4e 6
Toluene	0 03	0 1	0 35	0 84	92 1	0 0066	0 08		5	
Xylenes	0 053	0 2	0 42	1 01	106 2	0 006	0 2		0 1	
c12 DCE	0 0077	0 0017	0 37	0 89	97	0 0041	0 01			
t12 DCE	0 0077	0 0017	0 37	0 89	97	0 0093	0 02		0 06	
TCE	0 012	0 1	0 58	1 39	131 4	0 0099		0 0059		2e 6
11DCA	0 0067	0 0017	0 38	0 92	99	0 0056	0 2	0 0057		1 6e 6
BDCM	0 0046	9e 4	0 88	2 12	163 8	0 0021	0 02	0 062		3 7e 5
Chlrfm	0 0068	0 0014	0 5	1 19	119 4	0 0037	0 01	0 03	0 098	2 3e 5
DBCM	0 0032	6e 4	1 57	3 77	208 3	7 8e 4	0 02	0 084		2 7e 5
2 CT	0 056	0 24	0 54	1 29	126 6	0 0036	0 02			
4 CT	0 05	0 21	0 54	1 29	126 6	0 0044	0 07			

FA = 1 for every chemical

Toxicity factors were taken from the Regional Screening Table (December 2009) dermal factors were taken from the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Part E or were derived in accordance with Appendix A of RAGS E

The following exposure factors were used

	Child	Adult
IR (L/day)	1	2
EF (days/yr)	350	350
ED (yrs)	6	24
BW (kg)	15	70
AT noncancer (days)	365 x ED	365 x ED
AT cancer (days)	365 x 70	365 x 70
SA (cm^2)	6600	18000
T (hrs/day)	1	0 5

The following showering inputs were used for the Foster and Chrostowski 1987 model T1 (293 K) Ts (318 K) u1 (1 002 cp) us (0 596 cp) d 1 mm ts 0 5 sec flow rate 10 L/min SV 12 m^3 Ds 30 min Dt 60 min Ra 0 01667/min

The following risks were derived

	Child HI	Adult HI	Cancer Risk	Risk Drivers	Chems > MCL
Slurry wall	0 2	0 09	4e 4	VC	VC
Clarion outside	0 002	9e 4	6e 8		
Mine void	2 5	1	3e 4	Toluene VC	Toluene VC
Res K/K			7e 8		
Res E	0 2	0 08	5e 4	VC	VC
Res G	0 08	0 04	1e 5		
Res R L			6e 8		
MCLs	8 5	12	3e 4	VC xylenes 124TCB THMs toluene	

LEGAL NOTICE

NOTICE

The Board of Supervisors of Pine Township Mercer County Pennsylvania intend at the regular meeting at 7 30 P M on November 10 1982 at the Municipal Building to take action on the proposed Ordinance in regard to the Pine Township Water System and setting forth Rules and Regulations governing the furnishing of water service

Brief Summary

The Rules and Regulations that will become effective January 1 1983 are made up of five (5) parts

Part 1 sets forth the rules and regulations concerning the applications for water service connections and for water service the approval of such applications and the effect of approval the need for special contracts defective plumbing and fixtures on a customers property and existing outstanding obligations owned by applicants

Part 2 sets forth the rules and regulations concerning water meters the procedure re inaccurate meters frequency of readings each time connections service line extensions and the responsibilities and expenses of the customer/owner with respect to connections extensions cross-connections and back flow prevention

Part 3 states the rules and regulations concerning water line extensions These rules and regulations set forth the procedure obligations responsibilities and expenses of the Township developers and water service committees

Part 4 sets forth the rules regulations and procedure concerning bills and payment

Part 5 sets forth the grounds and procedure concerning the discontinuance of service

This Ordinance is available for inspection at the home of the Secretary Mrs Shirley Vinton Sandy Lake Road Pine Township during reasonable business hours

Supervisors of Pine Township
Mrs Shirley Vinton Secretary
Nov 2

TOWNSHIP OF PINE

MERCER COUNTY PENNSYLVANIA

ORDINANCE No 5 of 1982

ES and REGULATIONS GOVERNING the FURNISHING of WATER c

ned this 10th day of November 1982, effective Janua

H. Thomas Paxton

Shirley Vinton

Edward L. McDonough

Thomas B. Mi

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Part 1 - Applications for Service

1 1 Applications for Water Service Connections A written application, prepared on a form furnished by the Township, must be submitted to the Township for the purpose of requesting the installation of a water service connection The application will request such information that the Township deems necessary, must be signed by the owner of the property or his duly authorized agent, and must be accompanied by the appropriate deposit as set forth in the Township's rate ordinance The application must be submitted at least one (1) month before service is required Applications will only be accepted for premises abutting existing Township water lines Service to premises not abutting existing Township water lines is covered under Part 3 - Water Line Extensions

1 2 Applications for Water Service A written application, prepared on a form furnished by the Township, must be submitted to the Township for the purpose of requesting water service The application will request such information that the Township deems necessary, must be signed by the owner of the property or his duly authorized agent, who may be a tenant, and be accompanied by the appropriate fee as set forth in the Township's rate ordinance Applications for water service from tenants will only be accepted when accompanied by a signed agreement from the property owner assuming responsibility for any delinquency in the payment of water bills. The application must be submitted at least one (1) week before service is required. An application for water service is to be submitted in lieu of an application for a water service connection on premises where a connection has previously been established A new application for water service must be filed by a new owner or new occupant of any premise already served when a change in ownership or tenancy occurs

1.3 Approval of Applications Applications are merely written requests for a water service connection and/or water service, all

applications being subject to the approval of the Township Board of Supervisors prior to the commencement of the work or service requested therein. Upon approval of the application, it will become a binding agreement between the customer and the Township Rates for water supply service will accrue from the date the water supply service is provided and water is available to the premises All agreements covering water service will continue from month to month unless ten (10) days written notice is given by the owner of the property of his desire to terminate service or the Township exercises its right of termination as hereinafter set forth

1 4 Special Contracts The Township may require, prior to the approval of service, a special contract, in addition to an application for service Conditions that may necessitate the preparation of a special contract could include, but are not limited to, the following

(A) Connections to other utilities or municipal subdivisions,
(B) Connections that require water line extensions or other special facilities to provide service,
(C) The provision of temporary service, including water service for construction or other special purposes, or
(D) When the water user has an unusually high standby requirement or requires the provision of in-plant fire service

1 5 Conditions of Plumbing System The piping and fixtures on the property of the customer are assumed to be in satisfactory condition at the time water service is provided The Township, therefore, will not be liable in any case for any accidents, breaks or leakages that are in any way related to the provision of, or failure to, provide water, or may in any way result from the usage or non-usage of water on the premises

1 6 Additional Considerations No agreement will be entered into with any applicant, until all outstanding obligations for water service, fees, meter repairs or other charges, due by the applicant at

premises now or theretofore owned/occupied by him shall have been paid, or until satisfactory arrangements for payment of such unpaid bills have been made The Township will furnish water and service only in accordance with the herein established Rules and Regulations and at the rates and fees prevailing at the time water and service is rendered Said rates, rules and regulations are part of every application agreement and contract entered into between the property owner/customer and the Township The Township reserves the right to amend, alter and/or repeal its rates, rules and regulations, in part or in whole, without notice The revised rates, rules and regulations will become and thereafter be part of all new and then existing application agreements and contracts

Part 2 - Regulations Governing Facilities

2 1 Water Meters All meters, unless specifically agreed otherwise, will be furnished and installed by the Township at the owner's/customer's expense The Township will be responsible for normal maintenance Meters will remain the property of the Township and shall be accessible to, and under the control of, the Township

The Township reserves the right in all cases to stipulate the size and type of meter to be installed on each service line The location of the meter shall be subject to the approval of the Township, shall be at a convenient and accessible location, and the meter shall be protected from freezing and other harms by the owner of the premises No fixture shall be attached to, or any branch made in, the service pipe between the meter and the street main

All piping, fittings, valves, check valves, structures, other accessories/materials and the labor for installing same, used in connection with meter settings within the property lines of the premises, shall be at the expense of the applicant The applicant will employ for this work, the services of a skilled tradesman, qualified and approved by the Township Piping and appurtenances shall be installed in accordance with the dimensions

and requirements of each specific case, so that the meter or meters can be easily and properly installed by the Township Standard clearances and minimum standards for piping and appurtenances in the vicinity of the meter are outlined in "Standards for Water Service Installations" provided by the Township to applicants for water service connections

The customer shall promptly notify the Township of any damage to, or the malfunction of the meter The customer is responsible for all damage to meters while on his premises The Township will replace and/or repair damaged meters billing the customer for the total cost of repair or replacement including the costs of parts, labor and transportation

Should any customer doubt the accuracy or correctness of the meter measuring water delivered to the customer's premises, the Township will upon written request of the customer, make a test of the accuracy of the meter The fee for such a test is set forth in the Township's rate ordinance If a meter so tested is found to have an error in registration in excess of four percent (4%), the cost of the test shall be borne by the Township Only the most recent bill, based on the last reading of such a meter shall be corrected in accordance with the findings of the meter test

Readings of meters shall be taken quarterly or monthly and shall be conclusive and binding on both the customer and the Township, except where the meter has been found to have been registering incorrectly or to have ceased to register If a method of adjusting the reading is not available, the quantity of water used shall be estimated by averaging the last four months of usage or by employing the quantity of water consumed in the last month The Township will employ the method of estimating the quantity of water consumed which the Township deems most appropriate on a case-by-case basis

In the event that Township representatives are unable to enter any premise for the purpose of making water meter readings for a

period of not less than three (3) consecutive billing periods, the owner of said property may be required to install a remote water meter register Upon written notice from the Township Secretary, the property owner will have a remote register installed The installation will be made or will be arranged by the Township at the property owner's expense

2 2 Service Line Connections The term, water service line connection, as used herein, includes all pipes, valves and other facilities by means of which the Township conducts water from its distribution mains to the curb stop The curb stop will be typically located at a point between the distribution main and the property line, within five (5) feet of the property line The service line connection includes The corporation stop or other means of connection to the distribution main, the service line connected to the corporation stop and extending from the point of connectio to the curb stop, and the curb stop, curb box and appurtenances

The Township will install a service line connection to serve individual premises upon receipt of a water service connection application and the receipt of the customer's/owner's deposit The Township shall make or make arrangements for all connections to the distribution mains and for the installation of all of the above defined components of the service line connection The service line connection will be provided at the customer's/owner's expense, remain the Township's property and be at all times under Township control. The Township reserves the sole right to turn on or turn off the curb stop cock, except in the case of emergency repairs to service lines, pieces or fixtures on the premises, in such cases a qualified plumber may close the curb box stop cock, and he must at once notify the Township of such action

It shall be the responsibility of the property owner to see that the curb box is protected from all damage and to use all reasonable precautions to prevent the curb box from being destroyed or covered. Prior to the laying of cement sidewalks, making changes in grade, etc , the customer/owner shall notify the Township to allow the Township to relocate and/or modify the curb box If such notice is not given, and the curb box is covered, the customer may be billed for the additional expense to the Township of finding and

relocating/modifying the curb box The Township will not be responsible for the cost of restoration of sidewalks or other surface features damaged during relocation/modification of the curb box In cases where services become frozen, the Township will, or arrange to have, the service line connection thawed from the distribution main to the curb box The thawing of the service line extension from the curb box to the premise being served will be the responsibility of and be at the expense of the customer/owner

2 3 Service Line Extensions The term service line extension, as used herein, includes all pipes, valves, and other facilities by means of which water is conducted from the curb stop to a point on the outlet side of the meter The service line extension includes the service line connected to the curb box and extending to a point inside the building wall or meter pit, a stop valve placed immediately ahead of the meter, connections for the inlet and outlet sides of the meter, and a swing check valve or pressure reducing valve on the outlet side of the meter

The service line extension shall be installed by and at the expense of the customer/owner. The customer/owner shall be responsible for the maintenance of the service line extension and shall promptly identify and remedy leaks in the service line extension Minimum standards for service line extensions are outlined in "Standards for Water Service Installations" provided by the Township to applicants for water service connections The customer/owner or his contractor will notify the Township as to when the service line extension is to be installed in order to permit the Township sufficient time to schedule the installation of the service line connection and to inspect the service line extension

2 4 Cross-Connections and Backflow Prevention A cross-connection is any physical connection or structural arrangement between the Township's water system and a customer's/owner's facilities through which waste water, hazardous or objectionable substances, or water from an auxiliary source of supply might enter the Township's water

system through backflow and backsiphonage Where the potential for a deleterious impact on the public water system exists due to cross-connections, it is the customer's/owner's responsibility to identify such conditions and install such facilities that may be required to absolutely guarantee that backflow and/or backsiphonage cannot occur Cross-connections are considered to include water supply outlets which are submerged in wastewater or other sources of contamination

Air gaps, check valves, and/or other protective measures shall be provided to all domestic/commercial fixtures, such as laundry equipment, lavatory/bathroom fixtures, dishwashers, etc , as required by county and local plumbing codes Special facilities for backflow/backsiphonage prevention must be provided by commercial/ industrial customers where the risk of a deleterious impact on the public water system exists Such protection will take the form of an air gap separation, a double check valve assembly or a reduced pressure principle backflow prevention device It is the responsibility of the customer/owner to identify all potential cross-connections, to develop an appropriate concept for backflow/ backsiphonage prevention, to install and maintain the required equipment, and to test said equipment as frequently as necessary to assure that said equipment is in good working order The Township Engineer may reject proposals for backflow/backsiphonage prevention when he deems same insufficient and require the customer/owner to develop a more effective proposal Further, the Township shall be guaranteed access to the backflow/backsiphonage equipment to ascertain whether it has been installed and has been kept in good working order The review of the Township Engineer, his recommendation to provide more effective facilities or the periodic inspections that the Township may or may not conduct, will in no way relieve or mitigate the customer's/owner's responsibility to install and properly maintain such equipment as to provide sufficient protection to the public water supply and public water system The customer/owner will remain fully responsible for any loss or damage directly or indirectly resulting

from or caused by the improper or negligent selection of concept, installation, use, repair or maintenance of said equipment The customer's/owner's failure to identify the need for, to install and/or maintain backflow/backsiphonage equipment shall be grounds for temporary or permanent discontinuance of water service to a customer's/owner's premise

Part 3 - Water Line Extensions

3 1 General Policy The Township shall be under no obligation at any time to make extensions to existing water lines, but may do so, upon the request of one or more prospective customers or upon the Township's determination that certain extensions are desireable

3 2 Developer's Water Lines When a person, corporation or partnership desires to construct a new distribution line or system to serve a commercial, residential or industrial development, they shall submit three(3) sets of plans/ specifications to the Township for approval The plans/ specifications shall show the proposed construction including size, length and location of the water lines, the construction materials, the location of valves, fittings and hydrants, the location of roads, property lines and other utilities, and calculations showing the basis for the projection of the development's average and maximum water demand The developer's submittal will be reviewed for adequacy by the Township Engineer After the approval of the Township, the developer will engage a qualified contractor approved by the Township to construct the proposed water facilities in conformance with his proposal The Township will inspect the work as it proceeds and upon the Township's final acceptance of construction, the developer shall furnish one (1) set of reproducible as-built drawings to the Township The developer shall also provide a one (1) year maintenance bond in the amount of one hundred percent (100%) of the cost of construction as a guarantee that all workmanship and materials provided are satisfactory and to guarantee that the developer shall remedy all defects which may develop during the one (1) year period from the date of acceptance

The developer will be responsible for all of the cost of construction of the water distribution facilities to serve his development He will also bear the cost of legal, engineering

and inspection costs incurred by the Township The ownership of all water lines and appurtanences serving residential developments will become the property of the Township upon the Township's final acceptance of construction and the developer's posting of the appropriate bonds The Township will operate and maintain said lines from that point forward as part of its overall Township water system The developer will receive no compensation for his assignment of the water facilities to the Township In non-residential developments, termination points between the Township system and the private on-site system will be established by agreement The Township will assume ownership of and the responsibility for operation and maintenance of the Township portion of the system The private on-site system will continue to be owned, operated and maintained by the developer and subsequent owners

As an alternative to the above, a developer may ask the Township to design and construct water facilities to serve his development Under such an arrangement, the developer will still be responsible for the full costs of construction, engineering, legal work and inspection The Township will embark on such a project upon the negotiation and execution of an agreement with the developer and the developer's deposit of an agreed upon amount in escrow account

In addition to water lines and appurtenances serving the development itself, in many cases it will be necessary to extend a transmission main from the nearest existing point on the Township system to the site of the development Other modifications and additions to the Township system, such as standpipes, booster pump stations and reinforcing mains may also be required In discussions with the developer, the Township may agree to pay for a portion, all or none of the cost of these improvements The Township's cost participation or lack thereof will be based on an evaluation of the benefits that may be generated by the improvements Participation or lack of participation will be at the sole discretion of the Township Board of Supervisors

3 3 Water Extension Committees A water extension committee is any association of two or more individuals who have associated themselves together to petition the Township to extend water lines to premises owned by said individuals, when the premises so owned are being intended for private use, rather than for resale as part of a land development program If the majority of the property owners who could be served by such an extension, sign a petition, requesting an evaluation of the feasibility of extending water service to a given area, the Township will review said extension request. It should be understood that properties abutting such an extension will be required to pay a water assessment fee to defray part or all of the cost of the extension The water assessment fee will be levied over and above the normal water service connection fee and monthly water service bills Upon completion of the feasibility evaluation, the Township will provide an estimate of the water assessment fee If upon disclosure of this fee, a majority of the property owners along the proposed extension still desire water service and signify same by signing a statement to that effect, then the Township may proceed to construct said extension

3.4 Municipal Water System Extensions From time to time the Township may independently explore the feasibility of limited water line extension programs to serve certain roads or areas in the Township or may undertake more comprehensive planning efforts studying the feasibility of providing water service to large portions of the Township. The feasibility of such service area extensions will be affected by the availability of grants/loans from state/federal governments, then current water system reserves and revenues, and anticipated revenues to be generated by the extensions The Township will embark on such extension programs when it feels that such extensions are in the long-term best interests of the Township and the water system

3 5 Mandatory Connection Any premises within the Township whose property abutts a Township water main is required to connect to

said main for public water service within ninety (90) days of installation of said main A premises requiring in excess of one hundred-fifty (150) feet of service line or which the Township deems non-serviceable is exempt from this requirement

Part 4 - Bills and Payment

4 1 Rendering of Bills All bills for services furnished by the Township will be based on the Township's rate ordinance and/or the provisions of special contracts with individual users Regular meter readings will be made monthly and bills will be rendered as soon as practical after the reading of the meters

4 2 Due Date and Penalty All bills shall fall due fifteen (15) days after the date of mailing If a bill remains unpaid after a period of fifteen days, the Township will impose a penalty of five percent (5%) of the total net charge If an account is more than thirty days in arrears, the Township may elect to forward a notice of deliquency and their intention to terminate service If the outstanding bills are not paid within ten (10) days of the issuance of said notice, service will be discontinued

4 3 Place of Payment All bills are payable at the Township office or at any pay agency that the Township may from time to time designate

4 4 Minimum Charge Each minimum charge as set forth in the T nship's rate ordinance entitles the customer to the amount of water specified, but no more, and all water used in excess of the minimum amount shall be paid for at the regular schedule of rates The minimum charge shall be paid whether such amount of water is taken or not, and no credit thereon will be applied to subsequent billing periods

4 5 Multiple Dwellings For all multiple premises served by a single master meter, including an apartment building, a duplex, etc , the minimum rates to be charged to the owner shall be calculated and determined based on the number of dwelling units, residences, businesses or commercial outlets present in accordance with the water rate ordinance

4 6 Deposits Cash deposits may be required for new customers requesting meter service and new/existing customers requesting work by the Township In the case of new customers requesting water service, the amount of the deposit will be equal to the estimated first quarterly billing, with a minimum of fifteen dollars ($15 00) The deposit will be refunded without interest after two quarters of service have been satisfactorily paid for by the customer/owner A cash deposit as set forth in the Township's rate ordinance, or equal to fifty percent (50%) of the anticipated cost of any requested work shall be paid to the Township by the customer/owner prior to said work being undertaken

Part 5 - Discontinuance of Service

5 1 Grounds for Discontinuance Applications may be cancelled or water service discontinued by the Township because of the non-payment of amounts due, or because of the customer's/owner's violation of any of the published and applicable rules and regulations governing the furnishing of water service

5.2 Notification The customer/owner will be given ten (10) days notification of the intent to and reasons for termination The Township's notification will be sent by registered mail