Cox-Colvin
& ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

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Columbus, Ohio 43220
(614) 442-1970
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K.F
4/11/01

EPA Region 5 Records Ctr.
253280

April 11, 2001

Mr. Matt Mankowski
USEPA, Region V
HSRW-65
77 West Jackson
Chicago, Illinois 60604

Re: Annual Groundwater Monitoring Report (Year 2000), South Point Plant Superfund Site Remedial Action, South Point, Ohio.

Dear Mr. Mankowski:

On behalf of Honeywell International, Cox-Colvin & Associates, Inc. is pleased to provide you with one copy of the *Annual Groundwater Monitoring Report (Year 2000), South Ponit Plant Superfund Site Remedial Action, South Point, Ohio.* This submittal is the first annual report and presents the groundwater quality and groundwater flow evaluations for two semi-annual sampling events in 2000. Also attached is the initial electronic data deliverable (EDD) for the site.

If you should have any questions or comments concerning the information presented in the report or EDD, please feel free to contact me at any time.

Sincerely,
Cox-Colvin & Associates, Inc.

Craig A. Cox, CPG
Principal Scientist

Attachments

cc: T. Metcalf, Honeywell (1 Copy w/o EDD)
K. O'Hara, Ohio EPA (1 Copy w/o EDD)

K:\CCA\PROJECTS\Allied\SouthPoint\RDRA\Annual Rpt\2000\coverletter.wpd

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April 11, 2001

Mr. Matt Mankowski
USEPA, Region V
HSRW-65
77 West Jackson
Chicago, Illinois 60604

Re: Annual Groundwater Monitoring Report (Year 2000), South Point Plant Superfund Site Remedial Action, South Point, Ohio - Electronic Data Deliverable

Dear Mr. Mankowski:

This cover letter accompanies the electronic data deliverables (EDD) and presents a summary of the information provided on disk. As you are aware, filing of the EDD is not required under the ROD for the South Point Plant Site. However, Honeywell International did agree to provide a limited information package in the Region V format.

The data is contained in six files on the attached zip-disk. The contents of the files are provided below.

File	Contents
SouthPoint.dxf	Site base map in DXF Format
SouthPoint20010411.OHD071650592.EPAR5SITE_v1	Comma-delimited site file
SouthPoint20010411.OHD071650592.EPAR5LOC_v1	Comma-delimited location file
SouthPoint20010411.OHD071650592.EPAR5SMP_v1	Comma-delimited chemistry sample file
SouthPoint20010411.OHD071650592.EPAR5CWTR_v1	Comma-delimited water level file
SouthPoint20010411.OHD071650592.EPAR5TRS_v1	Comma-delimited chemistry test/result file

If you should have any questions concerning the information presented on the attached disk, please feel free to contact me at any time.

Sincerely,
Cox-Colvin & Associates, Inc.

Craig A. Cox, CPG
Principal Scientist

Attachments

cc: T. Metcalf, Honeywell (w/o EDD)

K:\CCA\PROJECTS\Allied\SouthPoint\RDRA\Annual Rpt\2000\EDD\eddcoverletter.wpd

Annual Groundwater Monitoring Report (Year 2000)
South Point Plant Superfund Site Remedial Action
South Point, Ohio

April 11, 2001

Submitted to:

Honeywell International Inc.
101 Columbia Road
Morristown, NJ 07962-2105

Submitted by:

Cox-Colvin & Associates, Inc.
1151 Bethel Road, Suite 101
Columbus, Ohio 43220
(614) 442-1970

Cox-Colvin
& ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

Annual Groundwater Monitoring Report (Year 2000)
South Point Plant Superfund Site Remedial Action
South Point, Ohio

April 11, 2001

Submitted to:

Honeywell International Inc.
101 Columbia Road
Morristown, NJ 07962-2105

Submitted by:

Karl Valek, CPG
Senior Scientist
Cox-Colvin & Associates, Inc.

and

Craig A. Cox, CPG
Principal
Cox-Colvin & Associates, Inc.

Cox-Colvin
& ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

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1.0 Introduction

This document represents the annual report for the groundwater monitoring program conducted at the South Point Superfund Site (Plant) in South Point, Ohio during the year 2000. Groundwater monitoring was conducted, and this report was prepared, in accordance with the Final Design Report (FDR) for the South Point Plant Superfund Site (Parsons Engineering Science (Parsons), 2001). Groundwater quality and flow conditions are monitored semi-annually. The objective of this monitoring is to assess the flow and quality of groundwater until the remedial goals for groundwater are met.

This report presents the site setting, the field methods utilized for groundwater monitoring, the results of the groundwater monitoring, the NPDES permitted discharge trends, and the conclusions and recommendations for further monitoring. In addition, the groundwater quality data was provided to USEPA in an electronic form consistent with Region V's electronic data deliverable (EDD) format.

2.0 Site Setting

The Plant is located on a relatively flat portion of an Ohio River terrace, within the eastern flood plain of the Ohio River (Figure 2-1). The Plant is situated on 70 to 100 feet of unconsolidated alluvium and glacial outwash sediment resting on bedrock. The glacial sediments comprise the principal aquifer of the area. Overlying the aquifer is a relatively uniform silt and fine sand unit which is generally seven to 10 feet thick.

Groundwater in the unconsolidated aquifer is present under unconfined conditions. The water table (phreatic surface) occurs at an average elevation of 514 feet msl in observation wells at the Plant. This corresponds to an average depth-to-water of 45 feet. The average saturated thickness of the aquifer is 38 feet. Pumping test results indicate that the transmissivity of the aquifer is approximately 13,500 ft^2/day and the average hydraulic conductivity is 386 ft/day. Using an effective porosity of 0.2, groundwater velocities were calculated to range from 3.9 ft/day to 19 ft/day during the RI (Geraghty & Miller, 1994).

During the RI, groundwater was determined to be impacted by elevated levels of waste specific compounds (nitrate and ammonia), sulfate, iron, manganese, and other metals from on-site sources. Contaminant plumes were identified beneath the Plant and centered on the Plant's Central Well Field and Disposal Area D. Results of a borehole conductivity survey conducted during the RI indicate that, contaminant concentrations are highest, in general, near the top of the aquifer and diminish with depth. Based on the findings of the RI, a

Baseline Risk Assessment, and an Ecological Risk Assessment, preliminary remedial goals (PRGs) were developed for constituents of concern in soil and groundwater. The PRGs for groundwater chemicals of concern are presented in Table 2-1.

The following remedial action objectives address groundwater for protection of human health and the environment:

- prevent ingestion of contaminated groundwater (nitrates, ammonia, metals) under the Plant by future human receptors, and
- restore quality of the local groundwater under the Plant.

The selected remedy for groundwater, as proposed by Remedial Alternative RA-5A in USEPA's Proposed Plan (USEPA, 1997), consists of:

- institutional controls,
- containment through pumping of the existing containment system, and
- discharge to the Ohio River.

3.0 Field Methods

The field activities of the semi-annual groundwater monitoring program were conducted in April and October/November 2000. In addition, several wells were abandoned, repaired, or replaced in August 2000 as part of a monitor well network upgrade proposed during the development of the FDR. The following subsections describe the field methods employed to accomplish these tasks.

3.1 Well Network Upgrade

In March 1999, the locations of 108 wells were visually inspected to determine their current condition and their ability to assist in future long-term monitoring efforts. This activity was conducted in accordance with the Remedial Action Workplan (Parsons, 1998). Based on this inspection, 53 wells were scheduled for abandonment, 15 were scheduled for repair, 9 were scheduled for rehabilitation, and 5 were scheduled for replacement. For the remaining 26, many of which could not be located or had been previously abandoned, no further action was proposed. In addition, three new wells were proposed along the downgradient edge of the property, in the vicinity of the existing groundwater plume. Abandonment consisted of the permanent removal of wells in accordance with Ohio EPA policies. Repairs consisted of fixing protective casings and pads; and marking and re-

survey measuring points. Rehabilitation consisted of redevelopment, and well replacement included the abandonment of the pre-existing well.

In August 2000, many of these upgrades were completed, including the abandonment of 30 wells, the repair of 16 wells, the rehabilitation of 10 wells, the replacement of 4 wells, and the installation of 3 wells. Many of the abandonments proposed in the Remedial Action Workplan were for on-site production wells and were not completed because the well fields may become a crucial future aspect of the redevelopment of the site. Table 3-1 identifies the actions taken during the August 2000 well network upgrade. Figure 3-1 depicts the monitoring and containment well network that will be used for long term monitoring.

Lithologic and well construction logs for the new wells are provided in Appendices A and B, respectively. Well development forms are provided in Appendix C.

3.2 Water-level Measurements

Groundwater levels were measured to determine the direction of groundwater flow during each monitoring event. Static groundwater-level measurements were collected from the monitor well network during each episode of water-level collection. An electronic water-level indicator was used to measure the distance between the surveyed well measuring point and the groundwater surface. These measurements were subtracted from surveyed elevations to determine groundwater elevations which in turn were used to generate groundwater flow maps. Table 3-2 provides the water-level measurements collected during the scheduled monitoring dates as well as those collected during 1999.

3.3 Groundwater Sampling

Prior to initiation of purging and sampling activities, static water levels were measured in all monitor wells as described above. Groundwater samples were collected from 19 monitor and/or production wells during the year 2000. Monitoring wells were purged and sampled using disposable HDPE bailers and nylon rope. A new bailer and rope were used at each sampling point. Production wells were purged and sampled while operating. Purging and sampling was conducted in accordance with the SOPs provided in the Performance Verification Sampling Plan attached to the FDR (Parsons, 2001). Water sampling logs are provided in Appendix D.

The wells used for collection of groundwater samples are indicated on Table 3-1. Samples were submitted for laboratory analysis of ammonia, selected total metals (arsenic, beryllium, cadmium, copper, manganese, nickel), and nitrate/nitrite.

4.0 Results

This section discusses the results of the field activities and laboratory analyses obtained for the groundwater monitoring program during year 2000. The discussions will include groundwater elevations, groundwater flow, groundwater quality, the extracted volumes of water, extracted contaminant mass, and hydraulic containment.

4.1 Groundwater Elevations

Groundwater level data collected between March 1999 and October 2000 is provided in Table 3-2. Also included are three gauging events prior to the two groundwater measurement events associated with the semi-annual monitoring activities of 2000. Figure 4-1 is a chart indicating fluctuations in groundwater elevation at monitor wells MW-01 through MW-10. Figure 4-1 indicates that there is a general decline in water levels between March 1999 and October 2000. Imposed on this general trend are two spring events (March 1999 and April 2000) which show a slight increase in groundwater elevations and suggests that there is a seasonal aspect to groundwater elevation.

4.2 Groundwater Flow

The groundwater elevation data from two semi-annual monitoring events were used to generate water-table maps which indicate the direction of groundwater flow. Figures 4-2 and 4-3 indicate that the groundwater flow at the site is primarily to the southwest, toward the Ohio River and a large groundwater depression formed by the containment wells SPIS-23 and SPIS-24. The hydraulic gradient of the groundwater ranged was 0.0025 and 0.0022 feet/feet in April and October 2000, respectively. Based on a hydraulic conductivity of 386 ft/day and an effective porosity of 0.2, groundwater flow velocity is calculated to range from 4.2 to 4.8 ft/day, which is consistent with the values determined during the RI.

4.3 Groundwater Quality

Analytical results for the two semi-annual sampling events are provided in Table 4-1. Analytical data sheets are provided in Appendix E. Concentrations of ammonia,

nitrate/nitrite, and manganese were reported above PRGs for groundwater collected during both sampling events. Details of the exceedances are discussed below.

4.3.1 Ammonia

Although ammonia is present in many of the groundwater samples analyzed, it was detected in only one location and on only one sampling episode during year 2000 above the site-specific PRG of 30 mg/l (Table 4-1). In November 2000, ammonia was detected at a concentration of 55 mg/l in monitor well MW-07 which lies in the Mid-Plant Area.

Figures 4-4 and 4-5 depict the areal distribution of ammonia in groundwater at the Plant. Identified on Figure 4-5 is the inferred extent of the ammonia plume that exceeds the PRG. The plume is confined upgradient of the two containment wells (SPIS-23 and SPIS-24). Figure 4-6 presents a well-by-well comparison of ammonia concentration data for each of the two sampling events in year 2000. With the exception of the SPMW-07, it appears that ammonia concentrations are declining in the Mid-Plant Area plume.

4.3.2 Nitrate/Nitrite

Although nitrate/nitrite is present in most of the groundwater samples analyzed, it was detected in only four locations during year 2000 at or above the site-specific PRG of 10 mg/l (Table 4-1). Nitrate/nitrite exceeds the PRG at three wells in the Mid-Plant Area (SPIS-24, SPMW-02, and SPMW-07) and in a single well in Disposal Area D (SPMW-09).

Figures 4-4 and 4-5 depict the areal distribution of nitrate/nitrite in groundwater at the Plant. Identified on these figures are the inferred extent of the nitrate/nitrite plumes that exceeds the PRG. The Mid-Plant Area plume is confined upgradient of the two containment wells (SPIS-23 and SPIS-24). The Disposal Area D plume appears to dissipate onsite before it reaches the containment wells. Figure 4-7 presents a well-by-well comparison of nitrate/nitrite concentration data for each of the two sampling events in year 2000. In general, it appears that nitrate/nitrite concentrations are declining in both the Mid-Plant Area and Disposal Area D plumes. The elevated concentration in Disposal Area D is expected to decline following the removal of impacted soils in this area as part of the remedial action slated for that area (Parsons, 2001).

4.3.3 Manganese

Manganese was present in all groundwater samples analyzed during year 2000. However, it was detected in only six locations at or above the site-specific PRG of 1.4 mg/l (Table

4-1). Manganese exceeds the PRG in a single well in the Mid-Plant Area (SPMW-02), in a single well in Disposal Area D (SPMW-09), and in a single well in the area downgradient of the Eastern Disposal Area (SPMW-10). In addition, the concentrations exceeded the PRG in three of the four newly installed monitor wells (SPMW-11, SPMW-12, and SPMW-13) located downgradient of the containment wells.

Figures 4-4 and 4-5 depict the areal distribution of manganese in groundwater at the Plant. Because of the sporadic distribution of manganese within the aquifer, distinct "plumes" were not inferred. Figure 4-8 presents a well-by-well comparison of manganese concentration data for each of the two sampling events in year 2000. In general, there is no consistent trend present in the manganese concentration data. It is possible that the elevated concentrations of manganese in the wells could be a localized phenomenon caused by the recent well development process and/or well installation process. A better understanding of the manganese distribution may emerge next year as more data become available.

4.4 Extracted Groundwater and Contaminant Mass

In-line totalizing flow meter readings indicate that a combined total of approximately 334 million gallons of groundwater were extracted by the containment well SPIS-23 and SPIS-24 during the year 2000. Individual totals for SPIS-23 and SPIS-24 were 152 million and 181 million gallons, respectively (Table 4-2).

Using the groundwater extraction information and the groundwater quality results, the mass of contaminants removed from the groundwater beneath the Plant can be calculated. The summarized calculations are provided in Table 4-3. The extracted mass of those contaminants of concern detected above PRGs during the year 2000 are as follows:

- Ammonia - 18,155 kg;
- Nitrate/Nitrite - 10,580 kg; and
- Manganese - 414 kg.

4.5 Hydraulic Containment

The Feasibility Study (FS) for the Plant (Geraghty & Miller, 1997) included a groundwater modeling simulation that demonstrated that pumping SPIS-23 and SPIS-24 would provide a capture zone capable of capturing the present day plume (Figure 4-9). This capture zone model was based on a pumping rate of 150 gpm for each extraction well, and is therefore quite conservative.

Is manganese going to create a problem for monitor wells?

The actual pumping rates of the containment wells SPIS-23 and SPIS-24 were considerably higher. SPIS-23 pumped at a rate of 300 and 280 gallons per minute (gpm) during the monitoring events in April and October 2000, respectively. SPIS-24 pumped at 450 and 240 gpm during those same respective time periods. This pumping rate has been effective in containing the groundwater plumes as demonstrated by the analytical results discussed in Section 4.3.

Although the modeled capture zone does not demonstrate capture of the small plume surrounding SPMW-09, it is believed, based on actual groundwater elevations, that capture by the containment wells is likely. Careful attention will be placed on the area surrounding Disposal Area D during subsequent sampling episodes. Excavation of the soils from Disposal Area D is expected to result in improved groundwater quality in that area.

5.0 NPDES Discharge Trends

Groundwater from extraction wells and storm water runoff is combined and then discharged through an outfall to the Ohio River. This outfall is permitted under Ohio EPA National Pollutant Discharge Elimination System (NPDES), which details effluent limitations and monitoring requirements.

The site's NPDES permit is maintained and monitored by Ashland Inc., in accordance with the Settlement Agreement between Ashland Inc., and Honeywell International Inc (previously known as Allied Signal, Inc.)[1]. The 5-year permit (Number 0IN00088*DD) will require renewal by October 1, 2003. The permit requires daily monitoring of the flow rate, monthly sampling for ammonia and nitrate concentrations, and semi-annual sampling for pH and acute toxicity at Outfall 007. This outfall is equipped with an automated monitoring system. There are currently no permit limits for ammonia and nitrate. The permitted range for pH is 6.5 to 9.0 standard units. The permit limit for acute toxicity is 3.1 acute toxicity units.

A March 23, 1993 NPDES Permit Renewal Application No. OH0076392, submitted to the Ohio EPA Southeast District Office, Division of Water Pollution Control, provided a thorough characterization of the Plant effluent flow to the Ohio River, including sample results for all contaminants which were determined to be constituents of concern in the FS. The Ohio EPA conducted a review of the renewal application, including a Water-Quality

---

[1]Future NPDES monitoring will be the responsibility of the Lawrence Economic Development Corporation.

Based Effluent Limits analysis. The current NPDES Permit is based on the results of that evaluation.

Discharge data for ammonia and nitrate/nitrite from January 1997 through December 2000 are provided in Table 5-1 and presented graphically on Figure 5-1. The data indicate a general decline in ammonia and nitrate concentrations over time. During the period of time presented, many of the wells at the site have cycled on and off. This may be the cause of the rapid fluctuations in concentrations.

6.0 Summary and Recommendations

Groundwater flow is generally to the southwest toward the Ohio River. The groundwater elevations at the Plant are seasonal and exhibit higher elevations in spring.

Ammonia, nitrate/nitrite, and manganese were detected in groundwater samples from several wells at concentrations above PRGs. The primary contaminant plumes are located beneath the Mid-Plant Area, and are being captured by containment wells SPIS-23 and SPIS-24. Capture zone models and inspection of groundwater flow maps support this claim.

The present scope of groundwater monitoring should be continued for the year 2001. Well rehabilitation is planned for the containment wells SPIS-23 and SPIS-24 as prescribed in the FDR. Rehabilitation will include treatment for potential fouling materials (organic and inorganic) in the wells and the immediate vicinity.

7.0 References

Geraghty & Miller, Inc., 1997. Final South Point Feasibility Study, South Point, Ohio. Unpublished Consultants Report.

Parsons Engineering Science, Inc., 1998. Remedial Design Workplan, South Point Superfund Site, South Point, Ohio. Unpublished Consultants Report.

Parsons Engineering Science, Inc., 2001. Final Design Report, South Point Superfund Site, South Point, Ohio. Unpublished Consultants Report.

United States Environmental Protection Agency, 1997. Record of Decision (ROD), Allied Signal South Point Plant Site, South Point, Ohio.

Figures

2-1 Site Location, South Point Plant Superfund Site, South Point, Ohio.

3-1 Well Network, South Point Plant Superfund Site, South Point, Ohio.

4-1 Groundwater Elevations at the South Point Plant Superfund Site, South Point, Ohio.

4-2 Groundwater Flow Map (April 2000), South Point Plant Superfund Site, South Point, Ohio.

4-3 Groundwater Flow Map (October 2000), South Point Plant Superfund Site, South Point, Ohio.

4-4 Groundwater Plume Geometry (April 2000), South Point Plant Superfund Site, South Point, Ohio.

4-5 Groundwater Plume Geometry (October 2000), South Point Plant Superfund Site, South Point, Ohio.

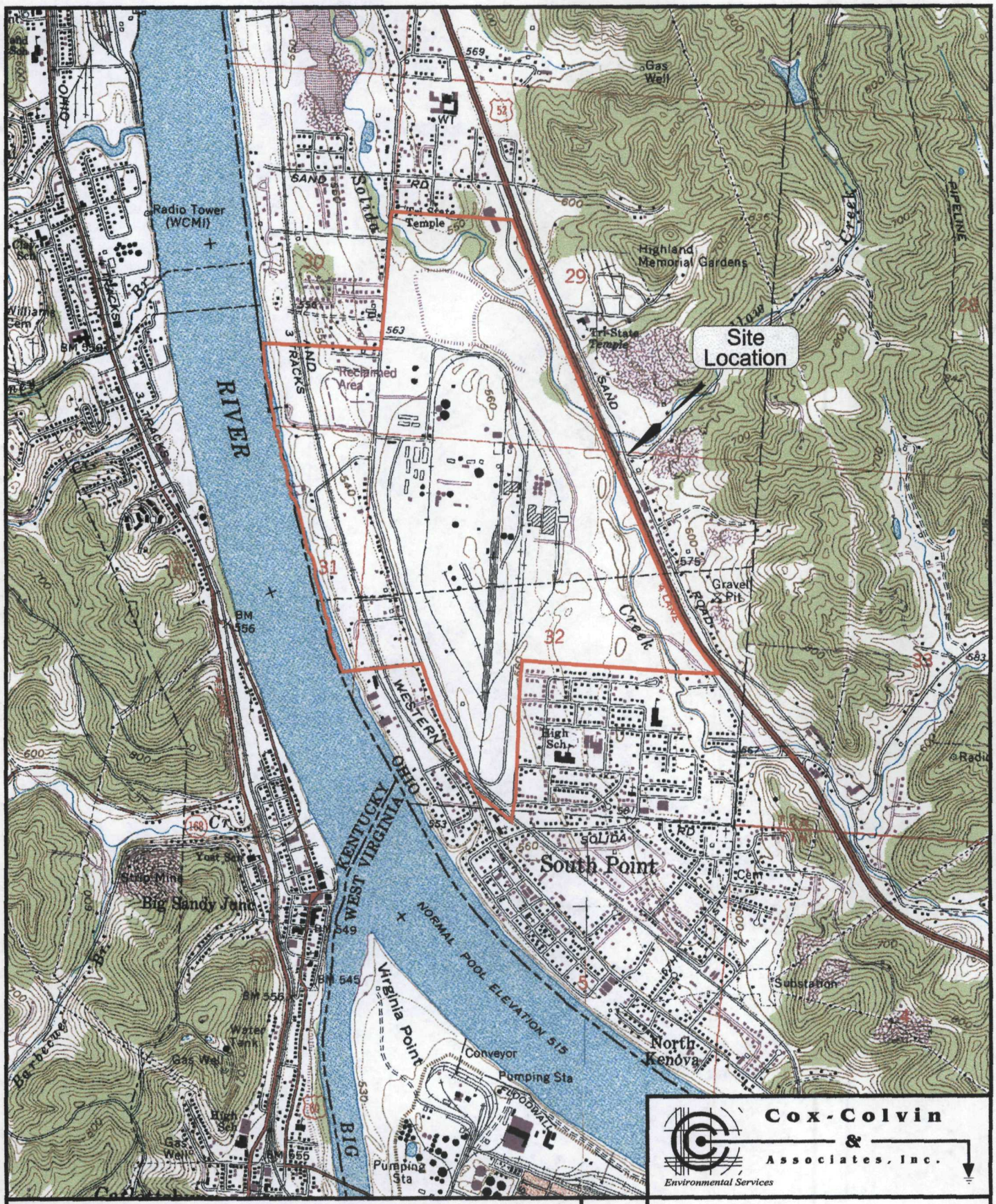
4-6 Ammonia Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio.

4-7 Nitrate/Nitrite Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio.

4-8 Manganese Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio.

4-9 Model of Groundwater Capture Zones, South Point Plant Superfund Site, South Point, Ohio.

5-1 NPDES Trends at the South Point Plant Superfund Site, South Point, Ohio.



Scale 1:24,000

0' 1000' 2000' 3000' 4000' 5000'

N

Source: 7.5 Minute Series Quadrangle
Catlettsburg, Kentucky - 1968
Photorevised 1985

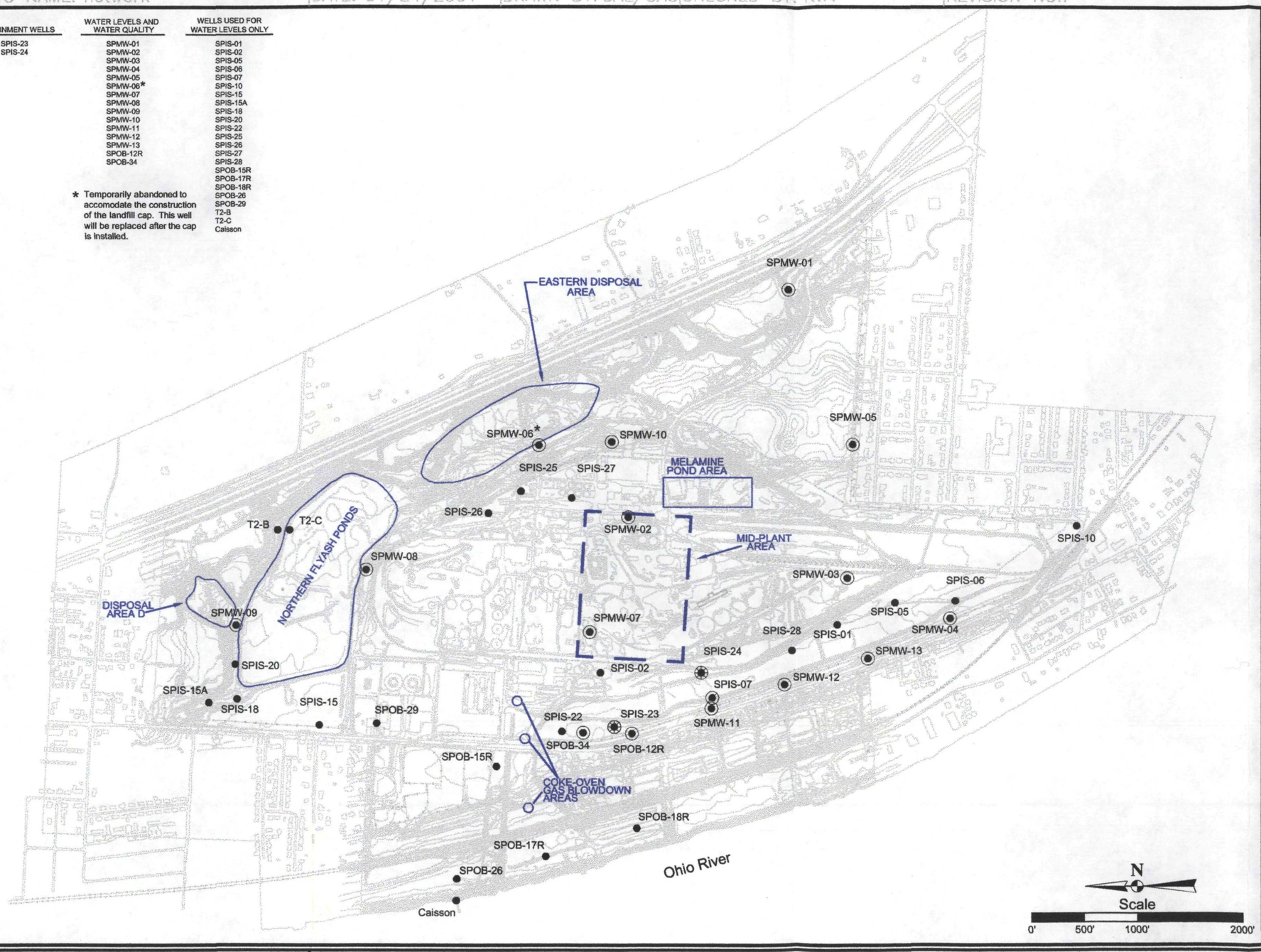
Figure 2-1

Site Location,
South Point Plant Superfund Site,
South Point, Ohio

DWG NAME: network | DATE: 01/24/2001 | DRAWN BY: GAL/CAC | CHECKED BY: KWV | REVISION NO.:

CONTAINMENT WELLS	WATER LEVELS AND WATER QUALITY	WELLS USED FOR WATER LEVELS ONLY
SPIS-23	SPMW-01	SPIS-01
SPIS-24	SPMW-02	SPIS-02
	SPMW-03	SPIS-05
	SPMW-04	SPIS-06
	SPMW-05	SPIS-07
	SPMW-06*	SPIS-10
	SPMW-07	SPIS-15
	SPMW-08	SPIS-15A
	SPMW-09	SPIS-18
	SPMW-10	SPIS-20
	SPMW-11	SPIS-22
	SPMW-12	SPIS-25
	SPMW-13	SPIS-26
	SPOB-12R	SPIS-27
	SPOB-34	SPIS-28
		SPOB-15R
		SPOB-17R
		SPOB-18R
		SPOB-26
		SPOB-29
		T2-B
		T2-C
		Caisson

* Temporarily abandoned to accomodate the construction of the landfill cap. This well will be replaced after the cap is installed.



Legend

- Containment Wells
- Wells Used for Water Levels and Water Quality
- Wells Used for Water Levels Only

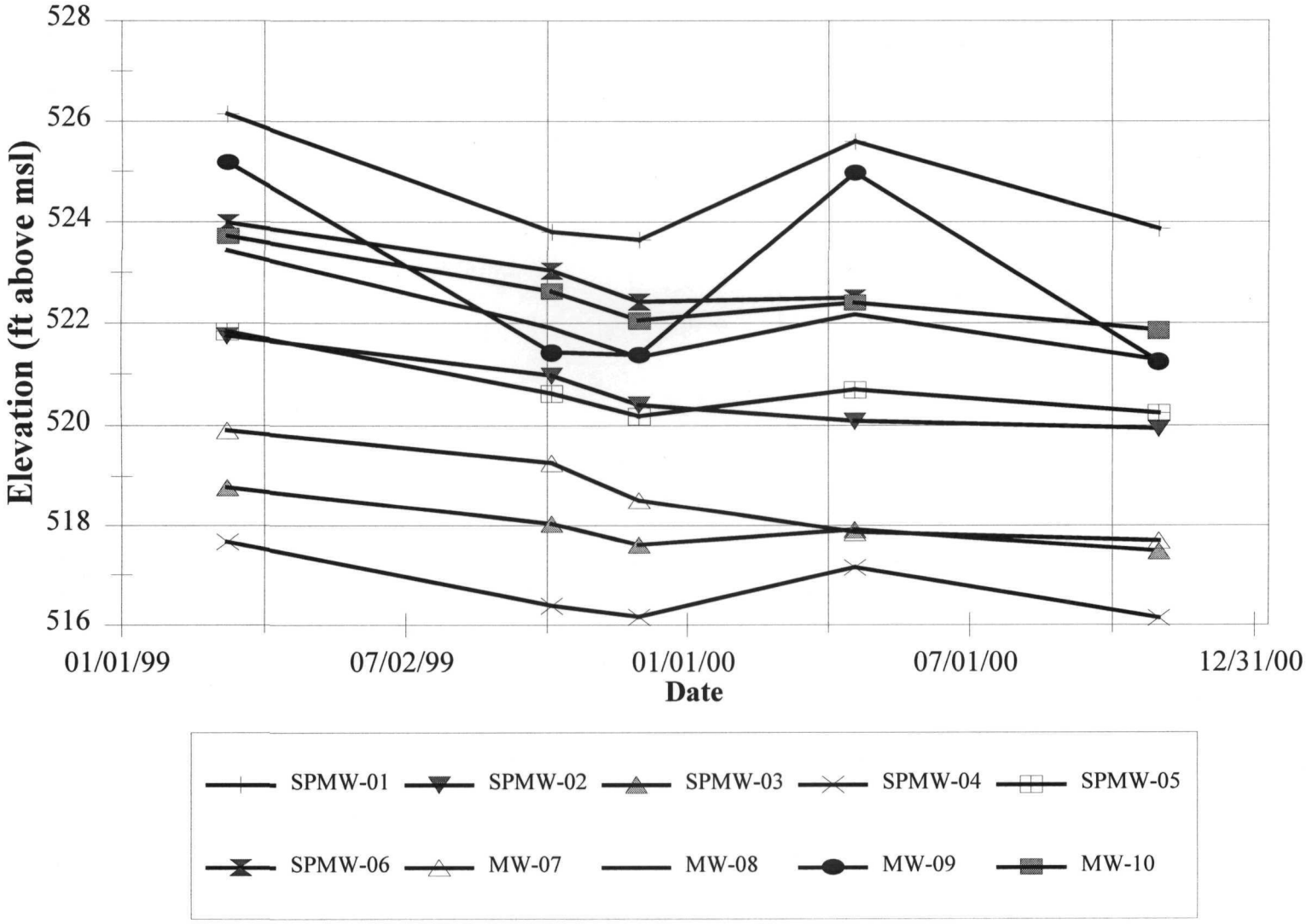
Well Network

Cox-Colvin & Associates, Inc.
Environmental Services

Well Network,
South Point Plant Superfund Site,
South Point, Ohio

Figure
3-1

Figure 4-1. Groundwater Elevations at the
South Point Plant Superfund Site, South Point, Ohio

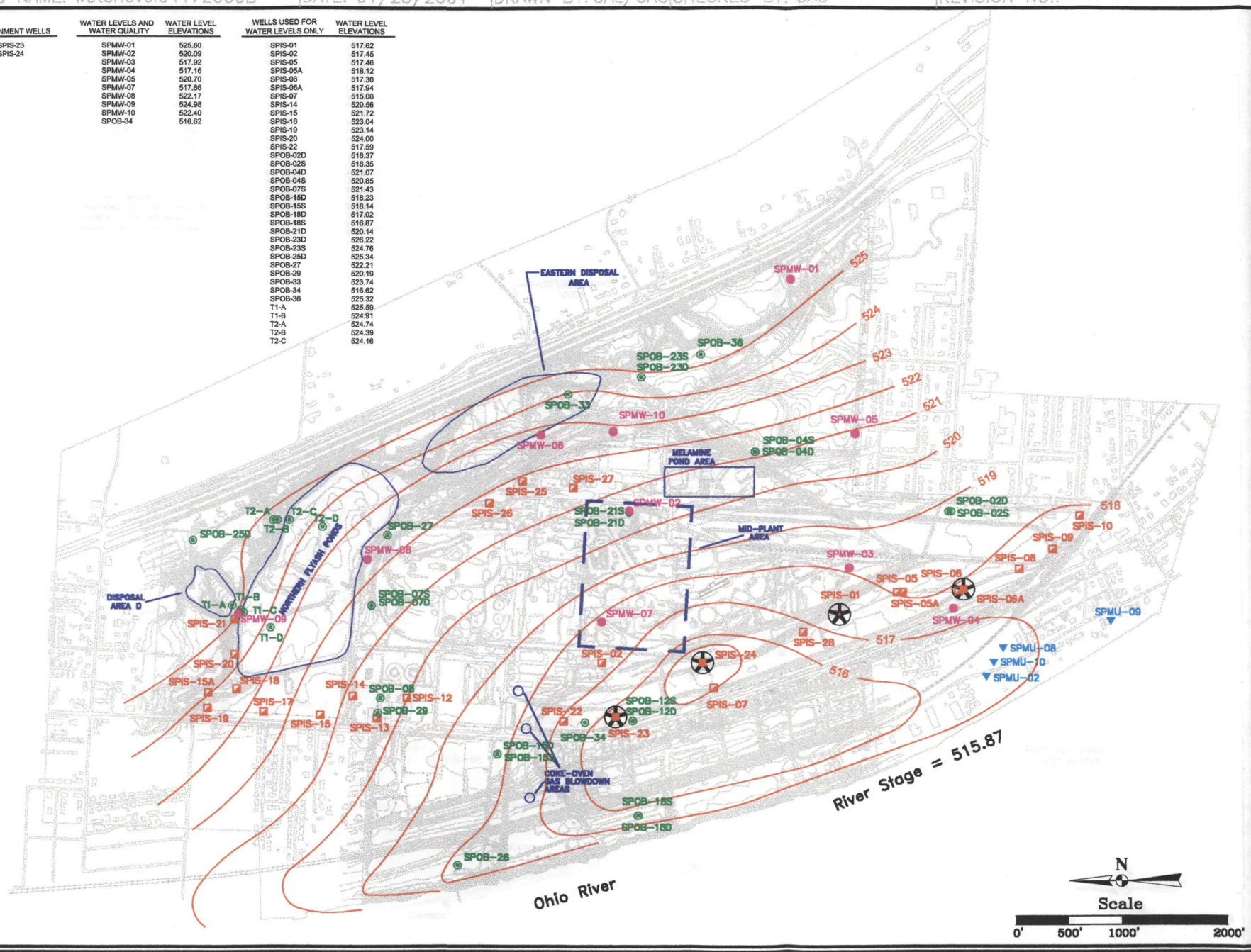


DWG NAME: waterlevel04172000B | DATE: 01/25/2001 | DRAWN BY: GAL/CAC | CHECKED BY: CAC | REVISION NO.:

CONTAINMENT WELLS
SPIS-23
SPIS-24

WATER LEVELS AND WATER QUALITY	WATER LEVEL ELEVATIONS
SPMW-01	525.60
SPMW-02	520.09
SPMW-03	517.92
SPMW-04	517.16
SPMW-05	520.70
SPMW-07	517.86
SPMW-08	522.17
SPMW-09	524.98
SPMW-10	522.40
SPOB-34	516.62

WELLS USED FOR WATER LEVELS ONLY	WATER LEVEL ELEVATIONS
SPIS-01	517.62
SPIS-02	517.45
SPIS-05	517.46
SPIS-05A	518.12
SPIS-06	517.30
SPIS-06A	517.94
SPIS-07	515.00
SPIS-14	520.56
SPIS-15	521.72
SPIS-18	523.04
SPIS-19	523.14
SPIS-20	524.00
SPIS-22	517.59
SPOB-02D	518.37
SPOB-02S	518.35
SPOB-04D	521.07
SPOB-04S	520.85
SPOB-07S	521.43
SPOB-15D	518.23
SPOB-15S	518.14
SPOB-18D	517.02
SPOB-18S	516.87
SPOB-21D	520.14
SPOB-23D	526.22
SPOB-23S	524.76
SPOB-25D	525.34
SPOB-27	522.21
SPOB-29	520.19
SPOB-33	523.74
SPOB-34	516.62
SPOB-36	525.32
T1-A	525.59
T1-B	524.91
T2-A	524.74
T2-B	524.39
T2-C	524.16



Legend

- MUNICIPAL WELL (LOCATIONS ONLY, NOT USED TO OBTAIN WATER LEVELS)
- ACTIVE PRODUCTION WELL *
- INACTIVE PRODUCTION WELL
- MONITOR WELL
- OBSERVATION WELL/PIEZOMETER
- 516 — Elevation of water table (feet above msl)
- Nitrate Plume - 10 mg/L
- Ammonia Plume - 20 mg/L

Water level data collected April 17, 2000

Water levels and plume geometry interpreted by Cox-Colvin & Associates, Inc.

Note: Ammonia is now below the action level of 30 mg/L. Contour drawn at 20 mg/L.

Groundwater Flow Map (April 2000)

Cox-Colvin & Associates, Inc.
Environmental Services

Groundwater Flow Map (April 2000),
South Point Plant Superfund Site,
South Point, Ohio

Figure
4-2

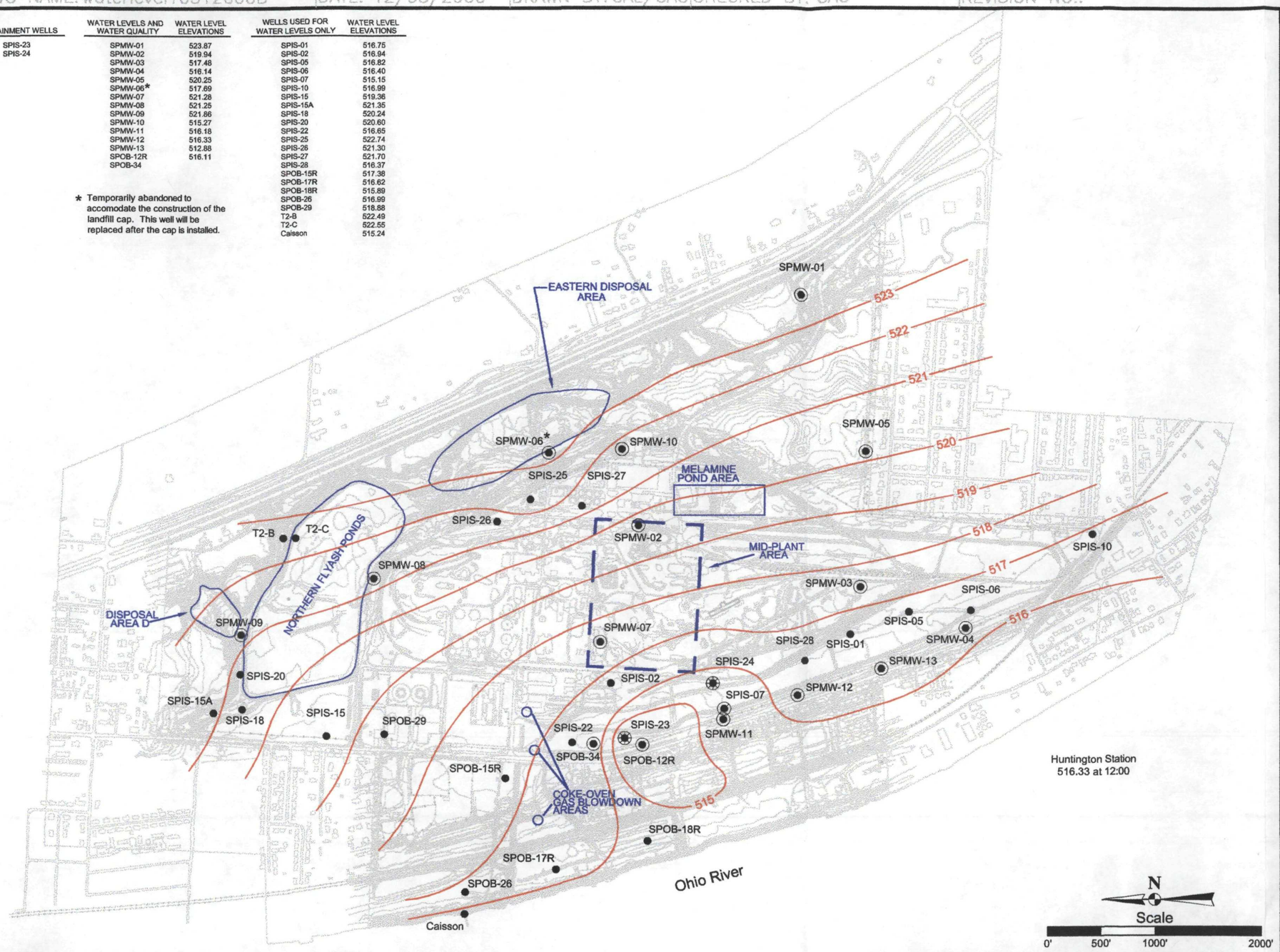
DWG NAME: waterlevel10312000B | DATE: 12/08/2000 | DRAWN BY: GAL/CAC | CHECKED BY: CAC | REVISION NO.:

CONTAINMENT WELLS
SPIS-23
SPIS-24

WATER LEVELS AND WATER QUALITY	WATER LEVEL ELEVATIONS
SPMW-01	523.87
SPMW-02	519.94
SPMW-03	517.48
SPMW-04	516.14
SPMW-05	520.25
SPMW-06*	517.69
SPMW-07	521.28
SPMW-08	521.25
SPMW-09	521.86
SPMW-10	515.27
SPMW-11	516.18
SPMW-12	516.33
SPMW-13	512.88
SPOB-12R	516.11
SPOB-34	

WELLS USED FOR WATER LEVELS ONLY	WATER LEVEL ELEVATIONS
SPIS-01	516.75
SPIS-02	516.94
SPIS-05	516.82
SPIS-06	516.40
SPIS-07	515.15
SPIS-10	516.99
SPIS-15	519.36
SPIS-15A	521.35
SPIS-18	520.24
SPIS-20	520.60
SPIS-22	516.65
SPIS-25	522.74
SPIS-26	521.30
SPIS-27	521.70
SPIS-28	516.37
SPOB-15R	517.38
SPOB-17R	516.62
SPOB-18R	515.89
SPOB-26	516.99
SPOB-29	518.88
T2-B	522.49
T2-C	522.55
Caisson	515.24

* Temporarily abandoned to accomodate the construction of the landfill cap. This well will be replaced after the cap is installed.



Legend

- Containment Wells
- Wells Used for Water Levels and Water Quality
- Wells Used for Water Levels Only
- —515— Elevation of water table (feet above msl)

Water level data collected October 31, 2000

Groundwater Flow Map (October 2000)

Cox-Colvin & Associates, Inc.
Environmental Services

Groundwater Flow Map (October 2000),
South Point Plant Superfund Site,
South Point, Ohio

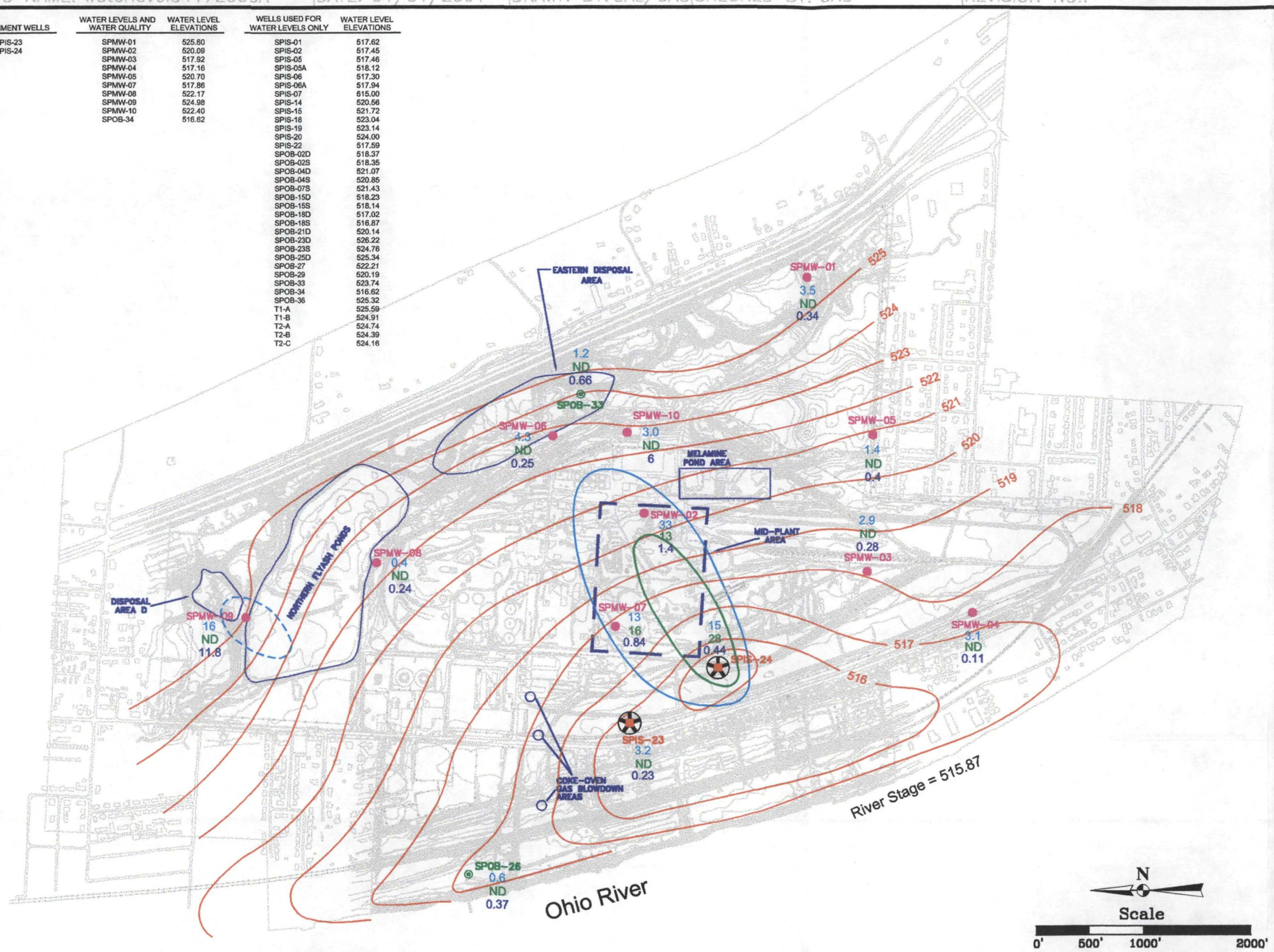
Figure
4-3

DWG NAME: waterlevel04172000A | DATE: 01/31/2001 | DRAWN BY: GAL/CAC | CHECKED BY: CAC | REVISION NO.:

CONTAINMENT WELLS
SPIS-23
SPIS-24

WATER LEVELS AND WATER QUALITY	WATER LEVEL ELEVATIONS
SPMW-01	525.60
SPMW-02	520.09
SPMW-03	517.92
SPMW-04	517.16
SPMW-05	520.70
SPMW-07	517.86
SPMW-08	522.17
SPMW-09	524.98
SPMW-10	522.40
SPOB-34	516.62

WELLS USED FOR WATER LEVELS ONLY	WATER LEVEL ELEVATIONS
SPIS-01	517.62
SPIS-02	517.45
SPIS-05	517.46
SPIS-05A	518.12
SPIS-06	517.30
SPIS-06A	517.94
SPIS-07	515.00
SPIS-14	520.56
SPIS-15	521.72
SPIS-18	523.04
SPIS-19	523.14
SPIS-20	524.00
SPIS-22	517.59
SPOB-02D	518.37
SPOB-02S	518.35
SPOB-04D	521.07
SPOB-04S	520.85
SPOB-07S	521.43
SPOB-15D	518.23
SPOB-15S	518.14
SPOB-18D	517.02
SPOB-18S	516.87
SPOB-21D	520.14
SPOB-23D	526.22
SPOB-23S	524.76
SPOB-25D	525.34
SPOB-27	522.21
SPOB-29	520.19
SPOB-33	523.74
SPOB-34	516.62
SPOB-36	525.32
T1-A	525.59
T1-B	524.91
T2-A	524.74
T2-B	524.39
T2-C	524.16



Legend

- MUNICIPAL WELL (LOCATIONS ONLY, NOT USED TO OBTAIN WATER LEVELS)
- ACTIVE PRODUCTION WELL *
- INACTIVE PRODUCTION WELL
- MONITOR WELL
- OBSERVATION WELL/PIEZOMETER
- 516 — Elevation of water table (feet above msl)
- Nitrate Plume - 10 mg/L
- Ammonia Plume - 20 mg/L

Water level data collected April 17, 2000

Note: Ammonia is below the action level of 30 mg/L. Contour drawn at 20 mg/L.

3.2	Nitrate Concentrations in mg/L
ND	Ammonia Concentrations in mg/L
0.23	Manganese Concentrations in mg/L
ND	Not Detected

Groundwater Plume Geometry (April 2000)

Cox-Colvin & Associates, Inc.
Environmental Services

Groundwater Plume Geometry (April 2000),
South Point Plant Superfund Site,
South Point, Ohio

Figure
4-4

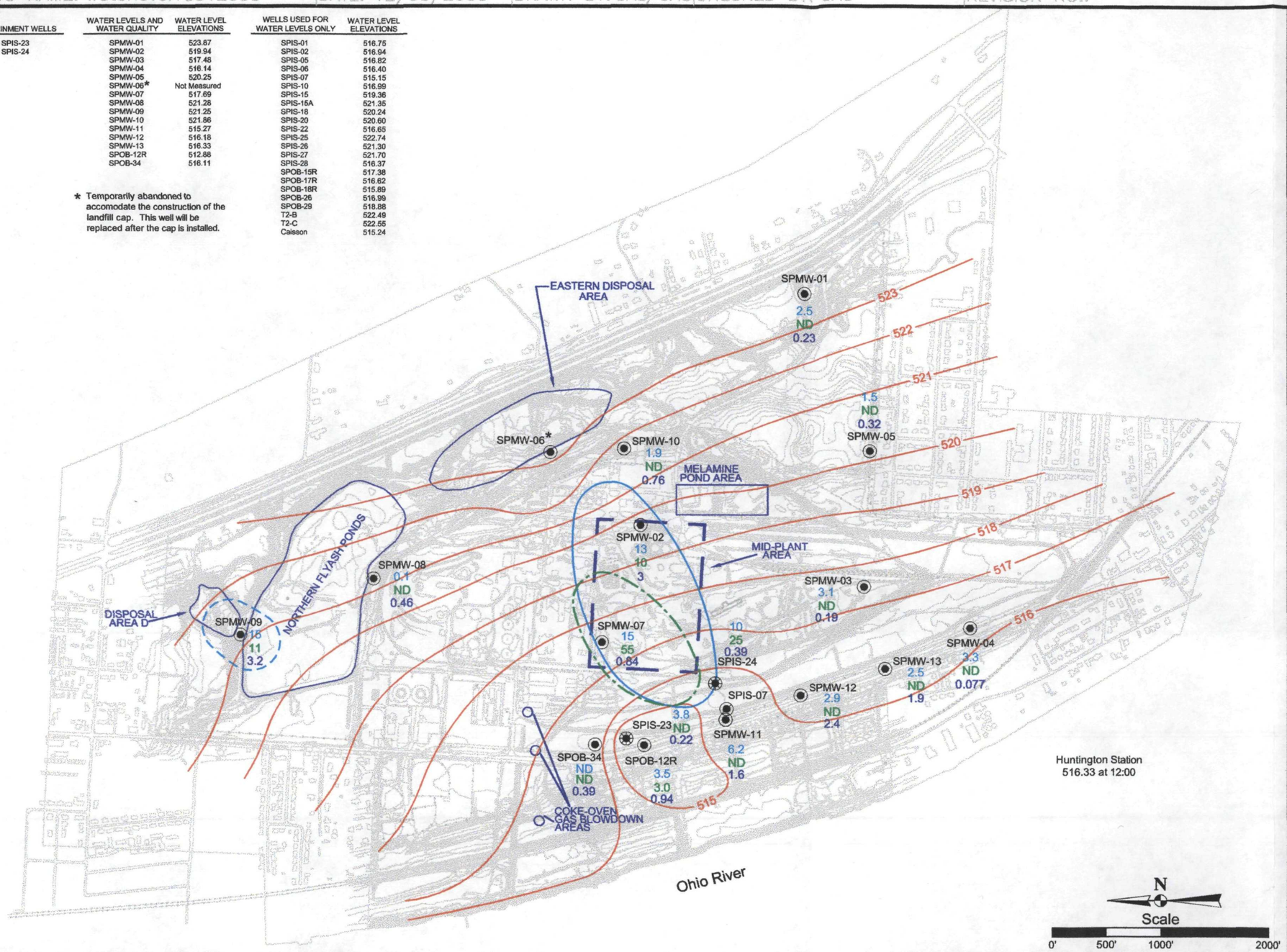
DWG NAME: waterlevel10312000 | DATE: 12/08/2000 | DRAWN BY: GAL/CAC | CHECKED BY: CAC | REVISION NO.:

CONTAINMENT WELLS
SPIS-23
SPIS-24

WATER LEVELS AND WATER QUALITY	WATER LEVEL ELEVATIONS
SPMW-01	523.67
SPMW-02	519.94
SPMW-03	517.48
SPMW-04	516.14
SPMW-05	520.25
SPMW-06*	Not Measured
SPMW-07	517.69
SPMW-08	521.28
SPMW-09	521.25
SPMW-10	521.86
SPMW-11	515.27
SPMW-12	516.18
SPMW-13	516.33
SPOB-12R	512.88
SPOB-34	516.11

* Temporarily abandoned to accomodate the construction of the landfill cap. This well will be replaced after the cap is installed.

WELLS USED FOR WATER LEVELS ONLY	WATER LEVEL ELEVATIONS
SPIS-01	516.75
SPIS-02	516.94
SPIS-05	516.82
SPIS-06	516.40
SPIS-07	515.15
SPIS-10	516.99
SPIS-15	519.36
SPIS-15A	521.35
SPIS-18	520.24
SPIS-20	520.60
SPIS-22	516.65
SPIS-25	522.74
SPIS-26	521.30
SPIS-27	521.70
SPIS-28	516.37
SPOB-15R	517.38
SPOB-17R	516.62
SPOB-18R	515.89
SPOB-26	516.99
SPOB-29	518.88
T2-B	522.49
T2-C	522.55
Caisson	515.24



Legend

- Containment Wells
- Wells Used for Water Levels and Water Quality
- 515 — Elevation of water table (feet above msl)
- Nitrate Plume - 10 mg/L
- Ammonia Plume - 30 mg/L

Water level data collected October 31, 2000

3.2	Nitrate Concentrations in mg/L
ND	Ammonia Concentrations in mg/L
0.23	Manganese Concentrations in mg/L
ND	Not Detected

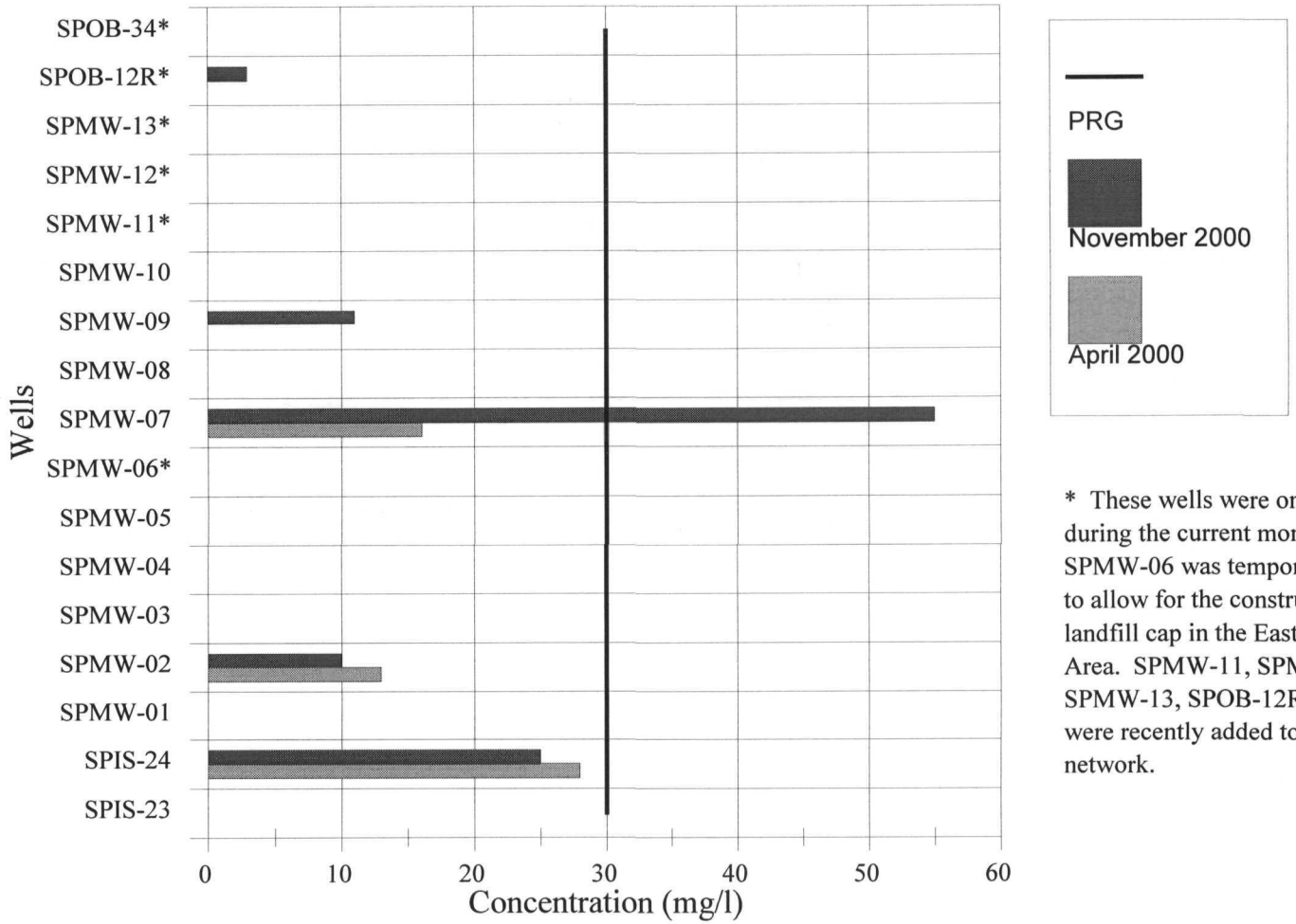
Groundwater Plume Geometry (October 2000)

Cox-Colvin & Associates, Inc.
Environmental Services

Groundwater Plume Geometry (October 2000),
South Point Plant Superfund Site,
South Point, Ohio

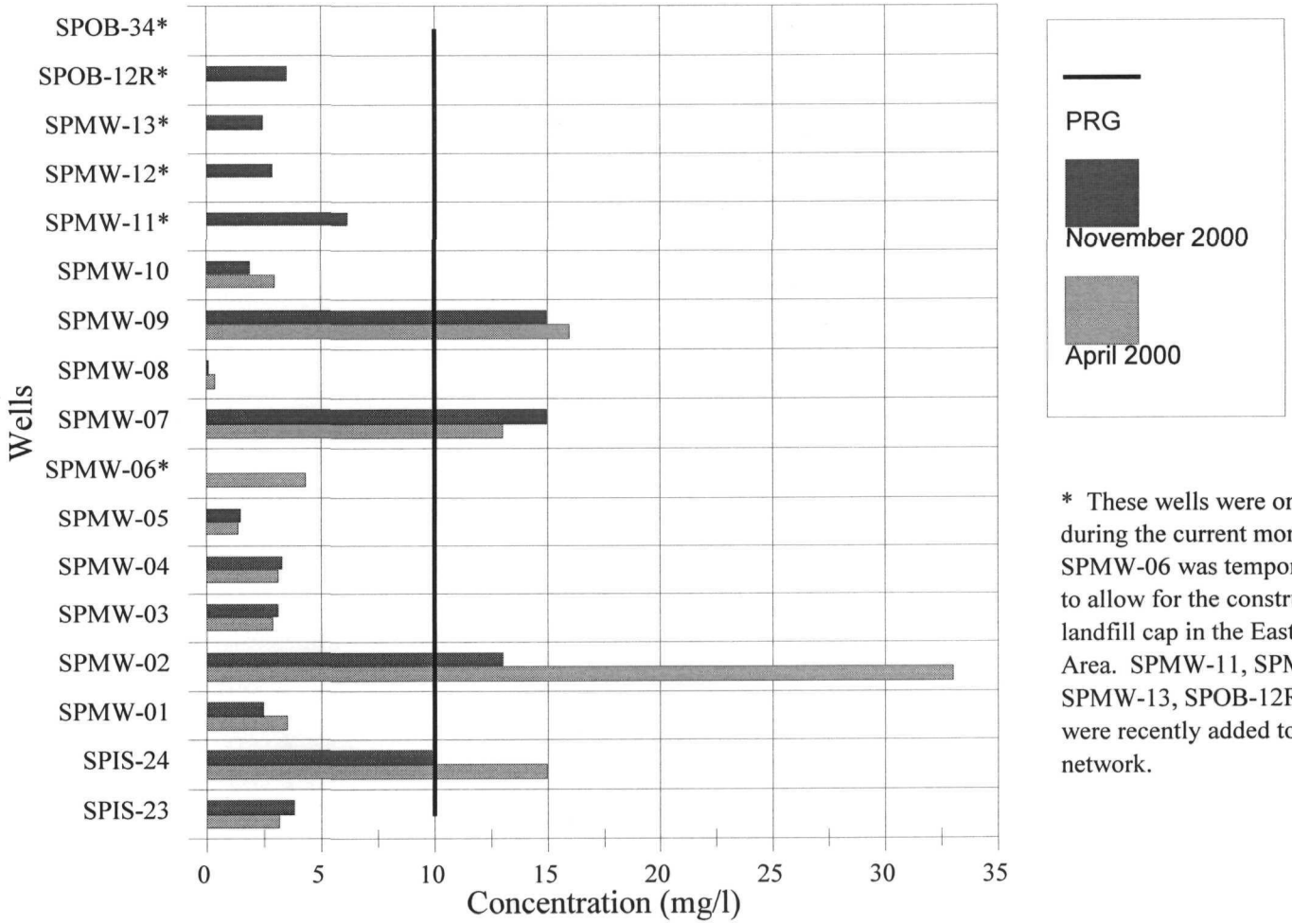
Figure
4-5

Figure 4-6. Ammonia Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio



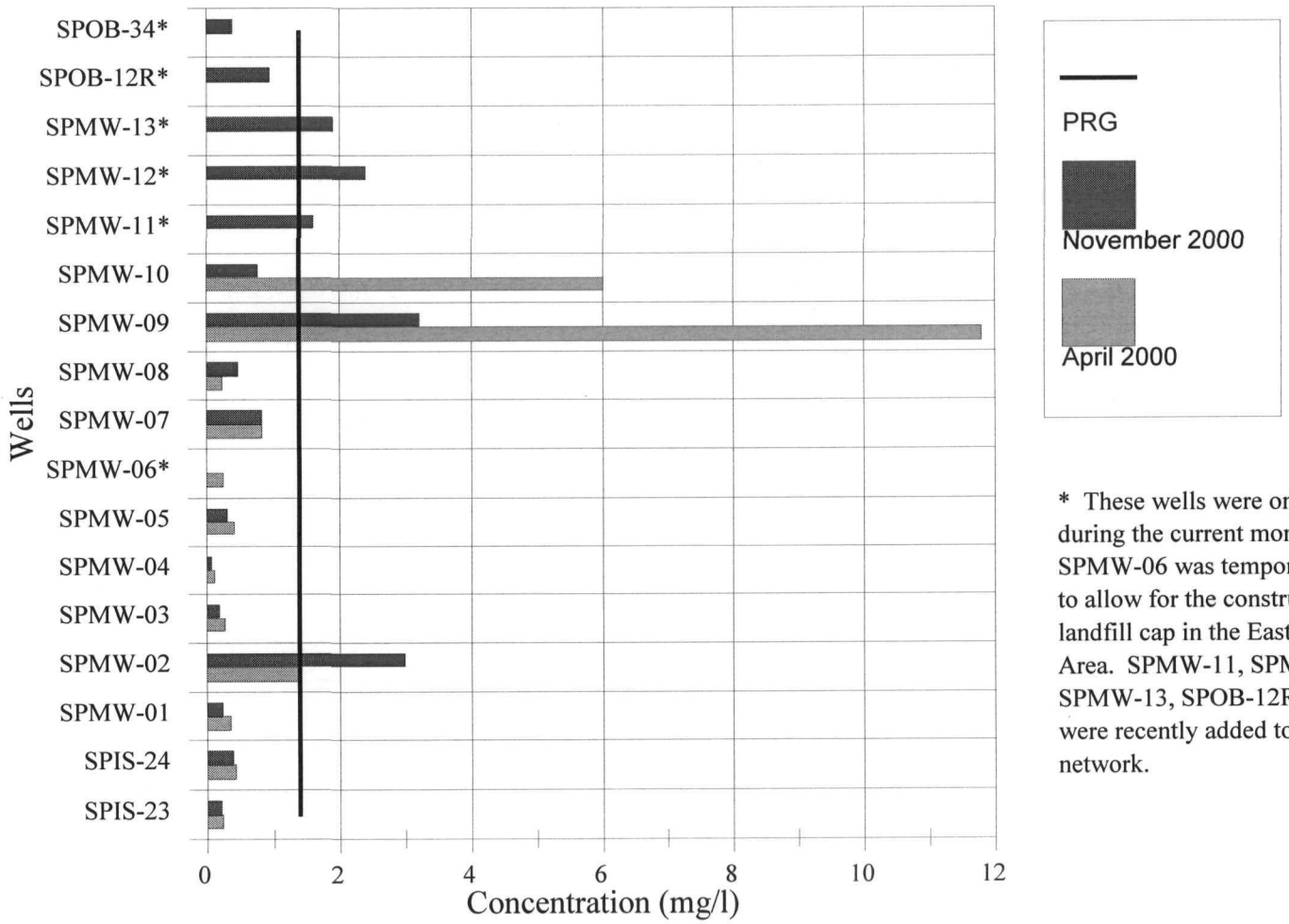
* These wells were only sampled once during the current monitoring period. SPMW-06 was temporarily abandoned to allow for the construction of the landfill cap in the Eastern Disposal Area. SPMW-11, SPMW-12, SPMW-13, SPOB-12R, and SPOB-34 were recently added to the monitor well network.

Figure 4-7. Nitrate/Nitrite Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio



* These wells were only sampled once during the current monitoring period. SPMW-06 was temporarily abandoned to allow for the construction of the landfill cap in the Eastern Disposal Area. SPMW-11, SPMW-12, SPMW-13, SPOB-12R, and SPOB-34 were recently added to the monitor well network.

Figure 4-8. Manganese Trends in Groundwater at the South Point Plant Superfund Site, South Point, Ohio

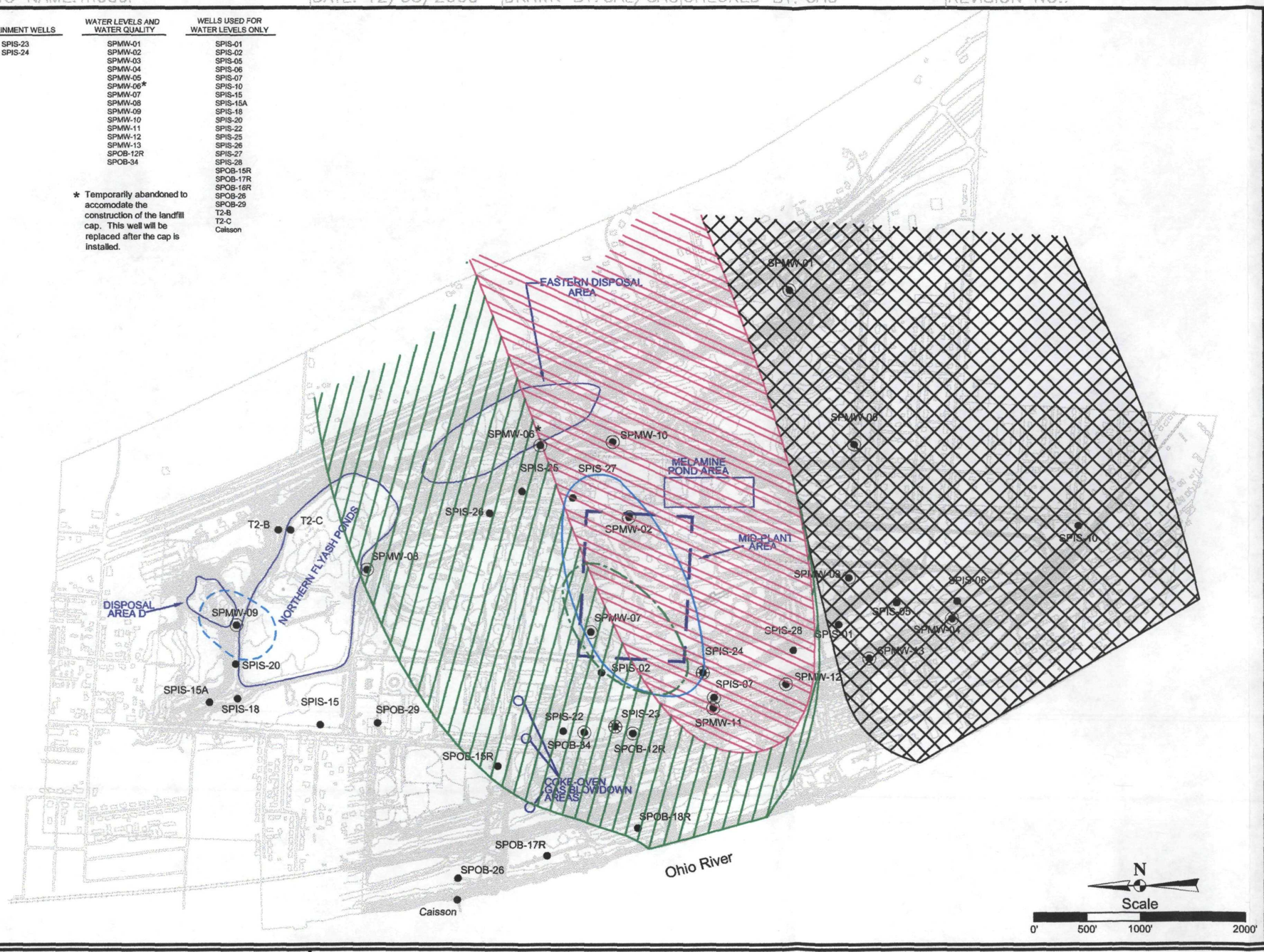


* These wells were only sampled once during the current monitoring period. SPMW-06 was temporarily abandoned to allow for the construction of the landfill cap in the Eastern Disposal Area. SPMW-11, SPMW-12, SPMW-13, SPOB-12R, and SPOB-34 were recently added to the monitor well network.

DWG NAME: model | DATE: 12/08/2000 | DRAWN BY: GAL/CAC | CHECKED BY: CAC | REVISION NO.:

CONTAINMENT WELLS	WATER LEVELS AND WATER QUALITY	WELLS USED FOR WATER LEVELS ONLY
SPIS-23	SPMW-01	SPIS-01
SPIS-24	SPMW-02	SPIS-02
	SPMW-03	SPIS-05
	SPMW-04	SPIS-06
	SPMW-05	SPIS-07
	SPMW-06*	SPIS-10
	SPMW-07	SPIS-15
	SPMW-08	SPIS-15A
	SPMW-09	SPIS-18
	SPMW-10	SPIS-20
	SPMW-11	SPIS-22
	SPMW-12	SPIS-25
	SPMW-13	SPIS-26
	SPOB-12R	SPIS-27
	SPOB-34	SPIS-28
		SPOB-15R
		SPOB-17R
		SPOB-18R
		SPOB-26
		SPOB-29
		T2-B
		T2-C
		Caisson

* Temporarily abandoned to accomodate the construction of the landfill cap. This well will be replaced after the cap is installed.



Legend

- Containment Wells
- Wells Used for Water Levels and Water Quality
- Wells Used for Water Levels Only
- Municipal Wells Capture Zone
- SPIS-24 Capture Zone
- SPIS-23 Capture Zone

From Capture Zone predicted by model for recovery and municipal wells by Geraghty & Miller in August 1996.

Ammonia and Nitrate plume geometry interpreted by Cox-Colvin & Associates, Inc. October 31, 2000.

- Nitrate Plume - 10 mg/L
- Ammonia Plume - 30 mg/L

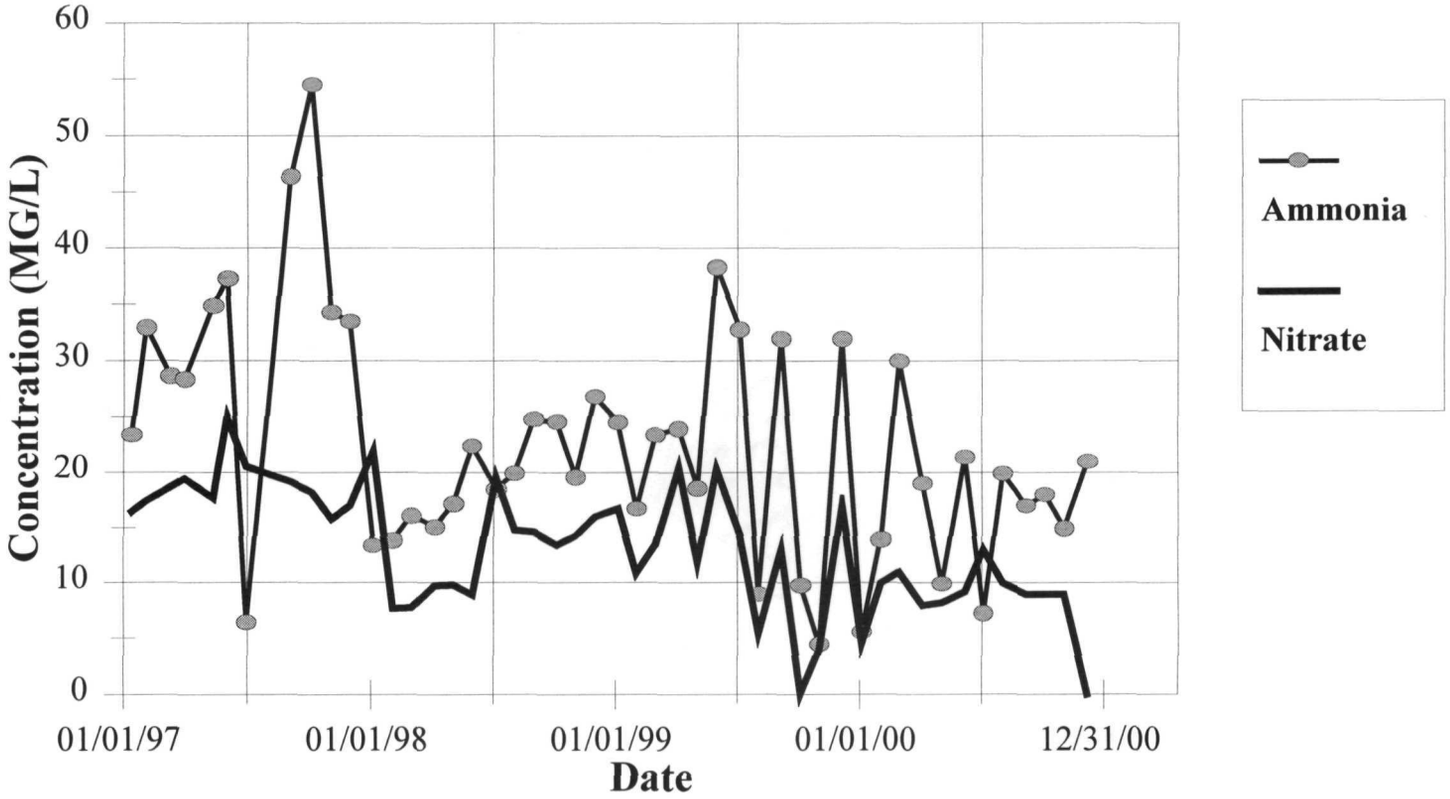
Model of Groundwater Capture Zones

Cox-Colvin & Associates, Inc.
Environmental Services

Model of Groundwater Capture Zones,
South Point Plant Superfund Site,
South Point, Ohio

Figure
4-9

Figure 5-1. NPDES Trends at the
South Point Plant Superfund Site, South Point, Ohio



Tables

2-1 Constituents of Concern and Performance Standards, South Point Plant Superfund Site, South Point, Ohio.

3-1 Well Network Status and Upgrade Actions taken in August 2000, South Point Plant Superfund Site, South Point, Ohio.

3-2 Depth to Groundwater and Calculated Groundwater Elevations, South Point Plant Superfund Site, South Point, Ohio.

4-1 Analytical Results for the Year 2000 Monitoring, South Point Plant Superfund Site, South Point, Ohio.

4-2 Extracted Groundwater Volume during Year 2000, South Point Plant Superfund Site, South Point, Ohio.

4-3 Extracted Contaminant Mass during Year 2000, South Point Plant Superfund Site, South Point, Ohio.

5-1 NPDES Discharge Data, South Point Plant Superfund Site, South Point, Ohio.

Table 2-1 Constituents of Concern and Performance Standards, South Point Plant Superfund Site, South Point, Ohio.

Constituents of Concern	Performance Standard (mg/l)
Arsenic	0.05
Beryllium	0.004
Cadmium	0.005
Copper	3.8
Manganese	1.4
Nickel	2
Ammonia (as Nitrogen)	30
Nitrate/Nitrite	10

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Table 3-1. Well Network Status and Upgrade Actions taken in August 2000, South Point Plant Superfund Site, South Point, Ohio.

Name	Well Type	Water Levels	Water Quality	Action Taken
SPIS-01	Production	Yes		Repaired
SPIS-02	Production	Yes		Repaired
SPIS-05	Production	Yes		No Action
SPIS-06	Production	Yes		No Action
SPIS-07*	Production	Yes		Repaired
SPIS-10	Production	Yes		Repaired
SPIS-12*	Production			No Action
SPIS-13*	Production			No Action
SPIS-14*	Production			No Action
SPIS-15*	Production	Yes		Repaired
SPIS-15A	Production	Yes		Repaired
SPIS-16*	Production			No Action
SPIS-17*	Production			No Action
SPIS-18	Production	Yes		Repaired
SPIS-19*	Production			No Action
SPIS-20*	Production	Yes		Repaired
SPIS-21*	Production			No Action
SPIS-22	Production	Yes		Repaired
SPIS-23	Production		Yes	No Action
SPIS-24	Production		Yes	No Action
SPIS-25	Production	Yes		Repaired
SPIS-26	Production	Yes		Repaired
SPIS-27	Production	Yes		Repaired
SPIS-28	Production	Yes		No Action
SPMW-01	Monitor	Yes	Yes	Rehabilitated
SPMW-02	Monitor	Yes	Yes	Rehabilitated
SPMW-03	Monitor	Yes	Yes	Rehabilitated
SPMW-04	Monitor	Yes	Yes	Rehabilitated
SPMW-05	Monitor	Yes	Yes	Rehabilitated
SPMW-06**	Monitor	Yes	Yes	Temporarily Abandoned
SPMW-07	Monitor	Yes	Yes	Rehabilitated
SPMW-08	Monitor	Yes	Yes	Rehabilitated
SPMW-09	Monitor	Yes	Yes	Rehabilitated
SPMW-10	Monitor	Yes	Yes	Repaired

Table 3-1. Well Network Status and Upgrade Actions taken in August 2000, South Point Plant Superfund Site, South Point, Ohio.

Name	Well Type	Water Levels	Water Quality	Action Taken
SPMW-11	Monitor	Yes	Yes	Installed
SPMW-12	Monitor	Yes	Yes	Installed
SPMW-13	Monitor	Yes	Yes	Installed
SPOB-01	Observation			No Action, could not locate
SPOB-02D	Observation			Abandoned
SPOB-02S	Observation			Abandoned
SPOB-04D	Observation			Abandoned
SPOB-04S	Observation			Abandoned
SPOB-06D	Observation			No Action, could not locate
SPOB-06S	Observation			No Action, could not locate
SPOB-07D	Observation			Abandoned
SPOB-07S	Observation			Abandoned
SPOB-08	Observation			No Action, could not locate
SPOB-09	Observation			No Action, could not locate
SPOB-10	Observation			No Action, could not locate
SPOB-12D	Observation	Yes	Yes	Replaced
SPOB-12S	Observation			Abandoned
SPOB-13D	Observation			No Action, could not locate
SPOB-13S	Observation			No Action, could not locate
SPOB-14D	Observation			No Action, could not locate
SPOB-14S	Observation			No Action, could not locate
SPOB-15D	Observation	Yes		Replaced
SPOB-15S	Observation			Abandoned
SPOB-16D	Observation			Abandoned
SPOB-16S	Observation			Abandoned
SPOB-17D	Observation	Yes		Replaced
SPOB-17S	Observation			No Action, could not locate
SPOB-18D	Observation	Yes		Replaced
SPOB-18S	Observation			Abandoned
SPOB-21D	Observation			Abandoned
SPOB-21S	Observation			Abandoned
SPOB-23D	Observation			Abandoned
SPOB-23S	Observation			Abandoned

Table 3-1. Well Network Status and Upgrade Actions taken in August 2000, South Point Plant Superfund Site, South Point, Ohio.

Name	Type	Levels	Quality	Taken
SPOB-24D	Observation			Abandoned
SPOB-24S	Observation			No Action, could not locate
SPOB-25D	Observation			Abandoned
SPOB-25S	Observation			Abandoned
SPOB-26	Observation	Yes		Repaired
SPOB-27	Observation			Abandoned
SPOB-28	Observation			No Action, could not locate
SPOB-29	Observation	Yes		Repaired
SPOB-30	Observation			Abandoned
SPOB-31	Observation			Abandoned
SPOB-32	Observation			Abandoned
SPOB-33	Observation			Abandoned
SPOB-34	Observation	Yes	Yes	Repaired
SPOB-35	Observation			No Action, could not locate
SPOB-36***	Observation			Abandoned
T1-A	Piezometer			Abandoned
T1-B	Piezometer			Abandoned
T1-C	Piezometer			Abandoned
T1-D	Piezometer			No Action, could not locate
T2-A	Piezometer			Abandoned
T2-B	Piezometer	Yes		Rehabilitated
T2-C****	Piezometer	Yes		Rehabilitated
T2-D	Piezometer			Abandoned

* Production well originally proposed for abandonment. However, the current owner may choose to rehabilitate.

** SPMW-06 was temporarily abandoned to facilitate the construction of the landfill cap on the Eastern Disposal Area. A replacement well will be installed following construction of the cap.

*** SPOB-36 was scheduled for repair. However, this well was abandoned because it sat within the footprint of a technical training center proposed for the site.

***** This well was scheduled for abandonment. However, it was rehabilitate to use in case T2-B, which is very close to Solida Creek, should become unstable.

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Table 3-2 Depth to Groundwater and Calculated Groundwater Elevations, South Point Plant Superfund Site, South Point, Ohio

Name	Depth to Water					Elevation of Water Level				
	03/10/99	10/05/99	12/01/99	04/19/00	10/31/00	03/10/99	10/05/99	12/01/99	04/19/00	10/31/00
Caisson					35.05					515.24
Pier					35.76					515.33
SPIS-01	48.30	50.75	48.08	44.14	44.74	513.46	511.01	513.68	517.62	516.75
SPIS-02	41.90	42.79	43.56	44.10	44.67	519.65	518.76	517.99	517.45	516.94
SPIS-05	44.15	45.05	45.40	44.85	45.49	518.16	517.26	516.91	517.46	516.82
SPIS-06	49.48	50.68	50.89	49.85	50.75	517.67	516.47	516.26	517.30	516.40
SPIS-07	46.65	47.30	48.13	49.04	48.94	517.39	516.74	515.91	515.00	515.15
SPIS-08	46.93	48.42	48.43			518.71	517.22	517.21		
SPIS-10	44.25	45.96	45.86		48.58	519.27	517.56	517.66		516.99
SPIS-12	40.93					521.39				
SPIS-13	40.82	42.22				520.20	518.80			
SPIS-14	41.65	43.15	43.66	42.55		521.46	519.96	519.45	520.56	
SPIS-15	40.20	41.95	42.40	40.90	44.89	522.42	520.67	520.22	521.72	519.36
SPIS-16	39.09									
SPIS-18	36.43	39.42	39.57	36.60	39.95	523.21	520.22	520.07	523.04	520.24
SPIS-19	36.43	39.49	39.61	36.46		523.17	520.11	519.99	523.14	
SPIS-20	39.20	42.62	39.72	39.33	42.73	524.13	520.71	523.61	524.00	520.60
SPIS-21	37.97					524.80				
SPIS-22	44.62	46.00	46.65	46.76	47.70	519.73	518.35	517.70	517.59	516.65
SPIS-23	47.30					517.44				
SPIS-25	48.74	49.02			49.63	523.43	523.15			522.74
SPIS-26	46.13				47.88	523.57				521.30
SPIS-27	50.87	51.23			50.90	521.73	521.37			521.70
SPIS-28	45.80	46.90	46.99		47.77	515.39	514.29	514.20		516.37
SPMW-01	37.75	40.09	40.25	38.30	40.03	526.15	523.81	523.65	525.60	523.87
SPMW-02	47.27	48.05	48.62	48.94	49.09	521.76	520.98	520.41	520.09	519.94
SPMW-03	44.30	45.05	45.47	45.16	45.60	518.78	518.03	517.61	517.92	517.48
SPMW-04	49.10	50.38	50.61	49.61	50.63	517.67	516.39	516.16	517.16	516.14
SPMW-05	61.82	63.03	63.48	62.96	63.41	521.84	520.63	520.18	520.70	520.25
SPMW-06	70.04	70.99	71.60	71.52		523.98	523.03	522.42	522.50	
SPMW-07	42.77	43.41	44.16	44.82	44.99	519.91	519.27	518.52	517.86	517.69
SPMW-08	42.05	43.59	44.15	43.32	44.21	523.44	521.90	521.34	522.17	521.28
SPMW-09	39.46	43.22	43.27	39.67	43.40	525.19	521.43	521.38	524.98	521.25
SPMW-10	62.08	63.18	63.75	63.40	63.94	523.72	522.62	522.05	522.40	521.86
SPMW-11					50.55					515.27

Table 3-2 Depth to Groundwater and Calculated Groundwater Elevations, South Point Plant Superfund Site, South Point, Ohio

Name	Depth to Water					Elevation of Water Level				
	03/10/99	10/05/99	12/01/99	04/19/00	10/31/00	03/10/99	10/05/99	12/01/99	04/19/00	10/31/00
SPMW-12					49.90					516.18
SPMW-13					49.58					516.33
SPOB-02D	43.48	44.43	44.74	44.28		519.17	518.22	517.91	518.37	
SPOB-02S	43.14	43.99	44.39	43.98		519.19	518.34	517.94	518.35	
SPOB-04D	59.45	60.38	60.89	60.57		522.19	521.26	520.75	521.07	
SPOB-04S	57.38	58.00	58.62	58.65		522.12	521.5	520.88	520.85	
SPOB-07S	43.17	44.59	45.12	44.41		522.67	521.25	520.72	521.43	
SPOB-12R					51.47					512.88
SPOB-12S	48.12	48.26	48.52			518.2	518.06	517.8		
SPOB-15D	45.13	46.39	47.15	46.73	47.02	519.83	518.57	517.81	518.23	517.38
SPOB-15S	45.62	46.28	46.76	46.79		519.31	518.65	518.17	518.14	
SPOB-16D	33.00					519.79				
SPOB-16S	32.54					519.76				
SPOB-17R					36.67					516.62
SPOB-18D	34.70	36.64	37.27	36.58		518.9	516.96	516.33	517.02	
SPOB-18R					36.47					515.89
SPOB-18S	31.90	33.56	34.10	33.67		518.64	516.98	516.44	516.87	
SPOB-21D	46.00	46.65	47.26	47.55		521.69	521.04	520.43	520.14	
SPOB-21S	46.25	46.70				521.79	521.34			
SPOB-23D	75.73	78.18	78.58	75.90		526.39	523.94	523.54	526.22	
SPOB-23S	76.48	78.50	78.93	77.34		525.62	523.6	523.17	524.76	
SPOB-25D	51.15	54.44	54.61	51.69		525.88	522.59	522.42	525.34	
SPOB-26	33.52	35.69	36.11	34.72	36.30	519.13	516.96	516.54	517.93	516.99
SPOB-27	45.45	46.88	47.44	46.85		523.61	522.18	521.62	522.21	
SPOB-29	40.75	44.03	44.58	43.67	44.72	523.11	519.83	519.28	520.19	518.88
SPOB-31	36.35					530.79				
SPOB-32	44.79					520.33				
SPOB-33	72.93	74.30	74.82	74.19		525	523.63	523.11	523.74	
SPOB-34	45.93	46.89	48.24	48.46	48.97	519.15	518.19	516.84	516.62	516.11
SPOB-36	77.51	80.60	80.27	78.21		526.02	522.93	523.26	525.32	
T1-A	35.98	40.18	41.09	36.14		525.75	521.55	520.64	525.59	
T1-B	39.41	43.13	43.18	39.66		525.16	521.44	521.39	524.91	
T1-D	48.56					523.97				
T2-A	17.09	19.77	20.05	17.99		525.64	522.96	522.68	524.74	
T2-B	17.10	20.17	20.50	18.50	20.41	525.79	522.72	522.39	524.39	522.49
T2-C	52.35	54.79	55.17	53.33	55.07	525.14	522.7	522.32	524.16	522.55

Blank denotes no measurement taken.

Table 4-1 Analytical Results for the Year 2000 Monitoring, South Point Plant Superfund Site, South Point, Ohio.

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPIS-23	SPIS-23	SPIS-24	SPIS-24
Sample Date			4/18/2000	11/02/2000	4/18/2000	11/02/2000
Sample Type			Industrial Supply Well	Industrial Supply Well	Industrial Supply Well	Industrial Supply Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199001	A0K060104001	A0D200199002	A0K060104002
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	< .025	< .025
Manganese	MG/L	1.4	.23	.22	.44	.39
Nickel	MG/L	2	< .01	.014	< .01	< .01
Ammonia as Nitrogen	MG/L	30	< 1	< 1	28	25
Nitrate/Nitrite	MG/L	10	3.2	3.8 J	**15**	10 J

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPIS-24A[1]	SPIS-24A	SPMW-01	SPMW-01
Sample Date			4/18/2000	11/02/2000	4/17/2000	11/01/2000
Sample Type			Industrial Supply Well	Industrial Supply Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199003	A0K060104003	A0D200199004	A0K060104004
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	< .025	< .025
Manganese	MG/L	1.4	.44	.38	.34	.23
Nickel	MG/L	2	< .01	< .01	.011	< .01
Ammonia as Nitrogen	MG/L	30	18	23	< 1	< 1
Nitrate/Nitrite	MG/L	10	**13**	10 J	3.5	2.5 J

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-02	SPMW-02	SPMW-03	SPMW-03
Sample Date			4/17/2000	11/01/2000	4/17/2000	11/01/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199005	A0K060104005	A0D200199006	A0K060104006
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	< .025	< .025
Manganese	MG/L	1.4	1.4	**3**	.28	.19
Nickel	MG/L	2	< .01	< .01	< .01	< .01
Ammonia as Nitrogen	MG/L	30	13	10	< 1	< 1
Nitrate/Nitrite	MG/L	10	**33**	**13 J**	2.9	3.1 J

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-04	SPMW-04	SPMW-05	SPMW-05
Sample Date			4/17/2000	11/01/2000	4/18/2000	11/01/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199007	A0K060104007	A0D200199008	A0K060104008
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	< .025	< .025
Manganese	MG/L	1.4	.11	.077	.4	.32
Nickel	MG/L	2	< .01	< .01	< .01	< .01
Ammonia as Nitrogen	MG/L	30	< 1	< 1	< 1	< 1
Nitrate/Nitrite	MG/L	10	3.1	3.3 J	1.4	1.5 J

1	Replicate sample.
<	Not detected.
Bold Concentrations	Represent values above PRG.
PRG	Preliminary Remedial Goals.

Table 4-1 Analytical Results for the Year 2000 Monitoring, South Point Plant Superfund Site, South Point, Ohio.

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-06	SPMW-07	SPMW-07	SPMW-07A[1]	SPMW-07A
Sample Date			4/17/2000	4/18/2000	11/01/2000	4/18/2000	11/01/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199009	A0D200199010	A0K060104009	A0D200199011	A0K060104010
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	< .025	< .025	< .025
Manganese	MG/L	1.4	.25	.84	.84	1	.85
Nickel	MG/L	2	< .01	< .01	< .01	< .01	< .01
Ammonia as Nitrogen	MG/L	30	< 1	16	**55**	16	**55**
Nitrate/Nitrite	MG/L	10	4.3	**13**	**15 J**	**11**	15 J

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-08	SPMW-08	SPMW-09	SPMW-09
Sample Date			4/18/2000	11/01/2000	4/18/2000	10/31/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199012	A0K060104011	A0D200199013	A0K060104012
Arsenic	MG/L	0.05	< .01	< .01	< .01	< .01
Beryllium	MG/L	0.004	< .003	< .003	.0031	< .003
Cadmium	MG/L	0.005	< .002	< .002	.0043	< .002
Copper	MG/L	3.8	< .025	< .025	2.3	.066
Manganese	MG/L	1.4	.24	.46	**11.8**	**3.2**
Nickel	MG/L	2	< .01	< .01	.46	.02
Ammonia as Nitrogen	MG/L	30	< 1	< 1	< 1	11
Nitrate/Nitrite	MG/L	10	.4	.1 J	**16**	**15 J**

Location			Monitoring Network	Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-10	SPMW-10	SPMW-11	SPMW-12
Sample Date			4/18/2000	11/01/2000	11/01/2000	11/02/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0D200199014	A0K060104013	A0K060104014	A0K060104015
Arsenic	MG/L	0.05	< .01	< .01	.013	.016
Beryllium	MG/L	0.004	< .003	< .003	< .003	< .003
Cadmium	MG/L	0.005	.0044	< .002	< .002	< .002
Copper	MG/L	3.8	< .025	< .025	.056	.05
Manganese	MG/L	1.4	**6**	.76	**1.6**	**2.4**
Nickel	MG/L	2	.1	.026	.071	.07
Ammonia as Nitrogen	MG/L	30	< 1	< 1	< 1	< 1
Nitrate/Nitrite	MG/L	10	3	1.9 J	6.2 J	2.9 J

Location			Monitoring Network	Monitoring Network	Monitoring Network
Sample Name			SPMW-13	SPOB-12R	SPOB-34
Sample Date			11/02/2000	11/03/2000	11/03/2000
Sample Type			Monitor Well	Monitor Well	Monitor Well
Media			Ground Water	Ground Water	Ground Water
Laboratory	Conc.	PRG	Severn Trent Labs	Severn Trent Labs	Severn Trent Labs
Lab ID	Units	MG/L	A0K060104016	A0K060104017	A0K060104018
Arsenic	MG/L	0.05	< .01	.016	.014
Beryllium	MG/L	0.004	< .003	< .003	< .003
Cadmium	MG/L	0.005	< .002	< .002	< .002
Copper	MG/L	3.8	.042	.031	< .025
Manganese	MG/L	1.4	**1.9**	.94	.39
Nickel	MG/L	2	.038	.036	< .01
Ammonia as Nitrogen	MG/L	30	< 1	3	< 1
Nitrate/Nitrite	MG/L	10	2.5 J	3.5 J	< .1

1	Replicate sample.
<	Not detected.
Bold Concentrations	Represent values above PRG.
PRG	Preliminary Remedial Goals.

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Table 4–2. Extracted Groundwater Volume during Year 2000, South Point Plant Superfund Site, South Point, Ohio.

Well ID	Pumping Rate (gpm)			Extracted Volume (gallons)
	April 2000	October 2000	Average	
SPIS-23	300	280	290	1.52E+08
SPIS-24	450	240	345	1.81E+08
Total				3.34E+08

gpm = gallons per minute

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Table 4-3 Extracted Contaminant Mass during Year 2000, South Point Plant Superfund Site, South Point, Ohio.

Well ID and Contaminant	Contaminant Concentrations (mg/l)			Extracted Groundwater Volume (gallons)	Extracted Contaminant Mass (Kg)
	April 2000	October 2000	Average		
SPIS-23					
Ammonia as Nitrogen	< 1	< 1	< 1	1.52E+08	Not Discernable
Nitrate/Nitrite	3.2	3.8	3.5	1.52E+08	2,016
Manganese	0.23	0.22	0.225	1.52E+08	130
SPIS-24					
Ammonia as Nitrogen	28	25	26.5	1.81E+08	18,155
Nitrate/Nitrite	15	10	12.5	1.81E+08	8,564
Manganese	0.44	0.39	0.415	1.81E+08	284
Totals					
Ammonia as Nitrogen					18,155
Nitrate/Nitrite					10,580
Manganese					414

1 gallon = 3.78541 liters

Concentration (mg/l) * Conversion (l/gal) * Volume (gal) * Conversion (kg/mg)

Table 5-1. NPDES Discharge Data, South Point Plant Superfund Site, South Point, Ohio.

Date	Flow Rate MGD	Nitrate MG/L	Ammonia MG/L
01/14/97	0.41	16.45	23.4
02/04/97	0.43	17.4	33
03/11/97	0.49	18.61	28.7
04/01/97	0.57	19.42	28.4
05/13/97	0.28	17.65	34.9
06/03/97	0.40	24.94	37.4
07/01/97	0.35	20.51	6.5
09/05/97	0.34	19.1	46.4
10/07/97	0.25	18.16	54.5
11/04/97	0.29	15.77	34.3
12/02/97	0.43	16.98	33.5
01/06/98	1.14	21.89	13.4
02/03/98	0.86	7.7	13.9
03/03/98	1.98	7.74	16.1
04/07/98	2.08	9.77	15.1
05/05/98	1.71	9.8	17.2
06/02/98	2.10	8.93	22.4
07/07/98	0.81	19.5	18.5
08/04/98	0.86	14.8	19.9
09/01/98	1.41	14.63	24.8
10/06/98	1.26	13.45	24.6
11/03/98	1.28	14.3	19.6
12/01/98	1.18	16.01	26.8
01/05/99	1.21	16.74	24.5
02/02/99	1.32	10.9	16.7
03/02/99		13.5	23.4
04/06/99		20.4	24
05/04/99	0.27	11.9	18.6
06/01/99	0.46	20.3	38.4
07/06/99	0.46	14.3	32.8
08/03/99	0.47	5.5	9
09/07/99	0.87	13	32
10/05/99	0.68	0.1	9.8
11/02/99	1.70	4	4.5
12/07/99	0.69	17	32
01/04/00	0.72	4.6	5.6
02/02/00	1.10	10	14
03/01/00	1.06	11	30
04/05/00	1.41	8	19
05/03/00	1.24	8.2	9.94
06/07/00	1.26	9.2	21.4
07/05/00	2.06	13	7.3
08/02/00	1.13	10	19.9
09/06/00	1.16	9	17
10/04/00	1.36	9	18
11/01/00	1.14	9	15
12/06/00	1.02	0	21

MGD Million gallons per day
MG/L Milligram per liter

Appendix A

Lithologic Logs

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LITHOLOGIC LOG

BORING/WELL SPMW-11	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 5**
TOTAL DEPTH (ft) 62.5	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 8/2/00 / 8/2/00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** Split Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface	
0-2	0.8	2-2-3-4			1			***SILTY CLAY: (CL-CH);*** clay 70%, silt 30%, strong brown (7.5YR4/6), damp, semi-plastic.	
2-4	1.8	2-5-5-9		3.0	2, 3			***SILTY CLAY: (CL-CH)*** clay 70%, silt 30%, strong brown, (7.5YR4/6), damp, semi-plastic; grading downward to silty, sandy clay (CL), clay 60%, silt 25%, sand 15%, strong brown (7.5YR4/6), damp, semi-plastic.	
4-6	1.8	4-5-7-7			4, 5			***SILTY, SANDY CLAY (CL)*** clay 60%, silt 25%, sand 25/%, strong brown (7.5YR4/6) damp, semi-plastic; grading downward to silty, sandy clay (CL), clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5YR4/6), damp	
6-8	1.4	3-4-7-7			6, 7			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), damp, semi-plastic; several 1-inch intervals of sand (SP), fine sand 80%, silt20%, strong brown (7.5 YR 4/6), moist, loose.	
8-10	1.9	NA			8, 9			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), damp; sand intervals up to 4 nches thick	
10-12	1.6	2-3-5-5			10, 11			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5YR4/6), damp; sand intervals up to 4 inches thick	
12-14	1.8	2-2-4-5			12, 13			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), damp; sand intervals up to 4 inches thick	
14-16	1.7	2-3-3-6			14, 15			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), damp.	

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LITHOLOGIC LOG

BORING/WELL SPMW-11 **PROJECT** South :Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					16			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), damp.	
16-18	1.8	2-3-3-5			17			***SILTY, SANDY CLAY (CL)*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), moist	
				18.6	18			***SILTY, SANDY CLAY*** clay 50%, very fine to fine sand 25%, silt 25%, strong brown (7.5 YR 4/6), moist	
18-20	1.6	8-9-25-31			19			***SAND _GRAVEL (SW-GW)*** very fine to very coarse sand 60%, gravel 30%, silt 10%, yellowish brown (10 YR 5/4), moist loose	
					20			***SAND AND GRAVEL (SW-GW)*** very fine to very coarse sand 60%, gravel 30%, silt 10%, yellowish brown (10 YR 5/4), moist, loose	
20-22	1.2	10-15-21-25			21				
					22			***SAND _GRAVEL (SW-GW)*** inferred on basis of adjacent wells, SP-MW and SPOB-12. Augered from 22 to TD. Water at 48.4. TD at 62.5	
					23				
					24				
					25				
					26				
					27				
					28				
					29				
					30				

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LITHOLOGIC LOG

BORING/WELL SPMW-11 **PROJECT** South :Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					31			***SAND _GRAVEL (SW-GW)*** inferred on basis of adjacent wells, SP-MW and SPOB-12. Augered from 22 to TD. Water at 48.4. TD at 62.5	
					32				
					33				
					34				
					35				
					36				
					37				
					38				
					39				
					40				
					41				
					42				
					43				
					44				
					45				

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LITHOLOGIC LOG

BORING/WELL SPMW-11 **PROJECT** South :Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					46 47 48 49 50 51 52 53 54 55 56 57 58 59 60			***SAND_GRAVEL (SW-GW)*** inferred on basis of adjacent wells, SP-MW and SPOB-12. Augered from 22 to TD. Water at 48.4. TD at 62.5	Water at 48.4

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LITHOLOGIC LOG

BORING/WELL SPMW-11 **PROJECT** South :Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					61				
					62				
								End of Borehole	
					63				
					64				
					65				
					66				
					67				
					68				
					69				
					70				
					71				
					72				
					73				
					74				
					75				

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LITHOLOGIC LOG

BORING/WELL SPMW-12	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 7**
TOTAL DEPTH (ft) 62.5	**BORING DIAM (in)** 2	**START/ COMPLETION DATE** 8-1-00 / 8-1-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2" OD Split-Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface	
0-2	0.9	1-3-2-4			1			***SILTY, SANDY CLAY (CH-CL)*** clay 60%, silt 20%, very fine sand 20%, very dark grayish brown (10 YR 3/2), damp, semi-plastic lighter near bottom	
2-4	2.0	2-3-5-6			2, 3			***SILTY, SANDY CLAY (CH-CL)*** clay 60%, silt 20%, very fine sand 20%, dark yellowish brown (10 YR 4/4), damp, semi-plastic	
4-6	1.3	2-4-6-7			4, 5			***SILTY, SANDY CLAY (CH-CL)*** clay 70%, silt 20%, very fine sand 10%, dark yellowish brown (10 YR 4/4), moist, semi-plastic.	
				6.0	6			***SANDY, SILTY CLAY (CL-CH)*** clay 50%, very fine sand 25%, silt 25%, dark yellowish brown (10 YR 4/4), moist, slightly plastic.	
6-8	1.9	3-4-6-6			7, 8			***SANDY, SILTY CLAY (CL-CH)*** clay 50%, very fine sand 25%, silt 25%, dark yellowish brown (10 YR 4/4), moist, slightly plastic.	
				8.6				***SAND (SP)*** fine grained sand, dark yellowish brown (10 YR 4/4), moist, loose.	
8-10	1.8	4-4-7-7			9, 10				

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LITHOLOGIC LOG

BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) fine grained sand, dark yellowish brown (10 YR 4/4), moist, loose.	
10-12	1.3	2-4-5-5			11				
				12.0	12			***SILTY CLAY (CL)*** clay 60%, silt 15%, very fine sand 15%, dark yellowish brown (10 YR 5/4), moist	
				12.3					
				12.7				***SAND (SP)*** fine grained sand, dark yellowish brown (10 YR 4/4), moist, loose.	
12-14	1.2	1-4-5-6			13			***SAND (SP)*** moderately grained sand, yellowish brown (10 Yr 5/4), moderately well sorted, moist, loose.	
				14.0	14			***SANDY, SILTY CLAY (CL)*** clay 50%, very fine sand 25%, silt 25%, yellowish brown (10 YR 5/4), moist, semi-plastic with one to two-inch layers of sand (fine grained, dark yellowish brown [10 YR 4/4], moist, loose).	
14-16	1.4	1-4-6-8			15				
					16			***SANDY, SILTY CLAY (CL)*** clay 50%, very fined sand 25%, silt 25%, yellowish brown (10 YR 5/4), moist, semi-plastic, several one to two-inch sand layers (fine grained, dark yellowish brown (10 YR 4/4), moist, loose).	
16-18	1.3	2-5-7-9			17				
					18			***SANDY, SILTY CLAY (CL)*** clay 50%, very fine sand 25%, silt 25%, yellowish brown (10 YR 5/4), moist, semi-plastic; several one to two-inch sand layers (fine grained, dark yellowish brown (10 YR 4/4), moist, loose).	
				18.3					
18-20	1.4	4-14-25-26			19			***SAND AND GRAVEL (SW-GW)*** very fine to very coarse sand 60%, very fine to very coarse gravel 25%, silt 15%, yellowish brown (10 YR 5/4), moist, loose.	
					20				

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LITHOLOGIC LOG

BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND AND GRAVEL (GW-SW) medium to very coarse sand 50%, very fine to very coarse gravel 50%, dark yellowish brown (10 YR 4/3), moist, loose.	
20-22	1.0	2-10-21-24			21				
					22			***SAND AND GRAVEL (GW-SW)*** medium to very coarse sand 50%, very fine to very coarse gravel 50%, dark yellowish brown (10 YR 4/3), moist, loose.	
22-24	2.0	2-12-18-10			23				
					24			***SAND AND GRAVEL (SW-GW)*** moderate to very coarse sand 70%, very fine to coarse gravel 20%, coal 10%, moist, loose, very poorly sorted, dark yellowish brown (10 YR 4/3).	
24-26	1.2	1-3-5-9			25				
					26			***SAND AND GRAVEL (GW-SW)*** medium to very coarse sand 50%, very fine to very coarse gravel 50%, dark yellowish brown (10 YR 4/3), moist, loose.	
26-28	1.2	1-7-9-7			27				
					28			***SAND AND GRAVEL (SW-GW)*** medium to very coarse sand 50%, very fine to very coarse gravel, dark yellowish brown (10 YR 4/3), moist, loose.	
28-30	1.6	6-10-9-8		29.2	29				
								SAND (SP) medium grained, light yellowish brown (10 YR 6/4), moist, loose, moderately well sorted.	
					30				

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BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) medium grained sand, moderately well sorted, light yellowish brown (10 Yr 6/4), moist, loose.	
30-32	1.5	2-7-14-13			31				
					32			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown 910 YR 6/4), moist, loose.	
32-34	1.2	0-6-7-10			33				
					34			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
34-36	1.2	1-5-9-7			35				
					36			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
36-38	1.4	4-11-10-14			37				
					38			***SAND AND GRAVEL (SW-GW)*** moderate to very coarse sand 70%, very fine to coarse gravel 30%, coal 10%, very poorly sorted, moist, loose, dark yellowish brown (10 YR 4/3).	
38-40	1.7	5-10-12-12		39.0	39			***SAND(SP)*** medium grained snad, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
					40				

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LITHOLOGIC LOG

BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
40-42	1.5	3-7-13-16			41				
					42			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
42-44	2.0	5-8-9-9			43				
					44			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (109 YR 6/4), moist, loose.	
44-46	1.7	5-7-9-8			45				
					46			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), wet, loose.	
46-48	1.6	4-6-8-10			47				
					48			***SAND (SP)*** medium grained sand, moderately well sorted, light yellowish brown (10 YR 6/4), wet, loose.	water at 48.0
48-50	1.3	2-8-9-9			49				
				50.0	50				

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BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
50-52	1.2	3-9-9-10			51			***SAND AND GRAVEL (SW-GW)*** moderate to very coarse sand 70%, very fine to very coarse gravel 30%, brown (10 YR 5/3), loose.	
				52.0	52			***SAND (SP)*** moderate to coarse sand, moderately well sorted, brown (10 YR 5/3), wet, loose.	
52-54	1.2	0-3-8-12			53				
					54			***SAND (SP)*** moderate to coarse grained, moderately well sorted, brown (10 YR 5/3), wet, loose.	
54-56	1.2	0-6-7-11			55				
					56			***SAND (SP)*** medium to coarse grained, moderately well sorted, brown (10 YR 5/3), wet loose.	
56-58	0.8	0-6-5-8			57				
					58			***SAND (SP)*** medium to coarse grained, moderately well sorted, brown (10 YR 5/3), wet loose.	
58-60	2.0	5-8-13-15			59				
					60				

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LITHOLOGIC LOG

BORING/WELL SPMW-12 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
60-62	1.6	0-5-8-13			61 62			***SAND (SP)*** medium to coarse sand, moderately well sorted, brown (10 YR 5/3), wet, loose.	
					63 64 65 66 67 68 69 70			End of Borehole	

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LITHOLOGIC LOG

BORING/WELL SPMW-13	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 7**
TOTAL DEPTH (ft) 68.9	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 8-2-00 / 8-2-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A. Dudley / K. Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface	
								SILTY CLAY (CL-CH) clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), damp, semi-plastic.	
0-2	1.1	2-3-3-3			1				
					2			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), damp, semi-plastic.	
2-4	1.6	2-4-5-6			3				
					4			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 105, strong brown (7.5 YR 4/6), damp, semi-plastic.	
4-6	1.8	2-5-5-5			5				
					6			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), moist, semi-plastic.	
6-8	1.4	3-5-7-9			7				
				8.0	8			***SILTY CLAY (CH)*** clay 80%, silt 20%, strong brown (7.5 YR 4/6), damp, plastic.	
8-10	2.0	2-4-5-3			9				
					10				

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				10.3 10.5				***SILTY CLAY (CH)*** clay 80%, silt 20%, strong brown (7.5 YR 4/6), damp, plastic.	
10-12	1.7	NA			11			***SANDY SILT (ML)*** silt 40%, very fine sand 40%, clay 20%, strong brown (7.5 YR 4/6), non-plastic.	
								SILTY CLAY (CL-CH) clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), damp, semi-plastic.	
					12			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), damp, semi-plastic.	
12-14	1.7	2-3-7-6		13.1	13			***SAND (SP)*** medium grained sand, well sorted, yellowish brown (10 YR 6/6), moist, loose.	
				13.6				***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 10, strong brown (7.5 YR 4/6), damp, semi-plastic.	
				14.2	14			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine 10%, strong brown (7.5 YR 4/6), damp, plastic.	
14-16	1.0	5-3-2-4			15			***SILTY SAND (ML)*** silt 40%, very fine sand 40%, clay 20%, strong brown (7.5 YR 4/6), non-plastic.	
				16.0	16			***SILTY CLAY (CL-CH)*** clay 60%, silt 30%, very fine sand 10%, strong brown (7.5 YR 4/6), damp, plastic.	
16-18	1.6	3-7-7-2		17.2	17			***SAND (SP)*** medium grained sand, well sorted, yellowish brown (10 YR 6/6), moist, loose. Alternates with silty clay from 18 to 20.	
					18				
18-20	1.6	3-3-4-1			19				
				20.0	20				

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					21 22 23 24 25 26 27 28 29 30			***SAND AND GRAVEL (SW-GW)*** inferred from adjacent boring SPMW-12; augered from 20 to 30.	

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Inferred from adjacent boring SPMW-12. medium to coarse sand. Augered fro 30 to 69. TD at 68.9	
					31				
					32				
					33				
					34				
					35				
					36				
					37				
					38				
					39				
					40				

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Inferred from adjacent boring SPMW-12. medium to coarse sand. Augered fro 30 to 69. TD at 68.9	
					41				
					42				
					43				
					44				
					45				
					46				
					47				
					48				
					49				
					50				

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Inferred from adjacent boring SPMW-12. medium to coarse sand. Augered fro 30 to 69. TD at 68.9	
					51				
					52				
					53				
					54				water at 54 feet
					55				
					56				
					57				
					58				
					59				
					60				

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LITHOLOGIC LOG

BORING/WELL SPMW-13 **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					61				
					62				
					63				
					64				
					65				
					66				
					67				
					68				
								End of Borehole	
					69				
					70				

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LITHOLOGIC LOG

BORING/WELL SPOB-12D	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 6**
TOTAL DEPTH (ft) 65	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 7-31-00 / 8-1-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A. Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface	
0-2	1.3	2-3-4-5			1			***SILTY CLAY (CL-ML)*** clay 70%, silt 30%, brown (10 YR 4/3) damp, semi-plastic, grading down to dark yellowish brown (10 YR 4/4)	
2-4	0.9	2-5-6-7			2, 3			***SILTY CLAY (CL)*** clay 60%, silt 30%, very fine sand 10%, dark yellowish brown (10 YR 4/4) damp, semi-plastic.	
4-6	1.6	3-5-4-6		4.0	4, 5			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 40%, clay 30%, silt 30%, brown (10 YR 4/3) damp, friable.	
6-8	0.7	3-4-8-7			6, 7			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 40%, clay 30%, silt 30%, brown (10 YR 4/3), moist, friable.	
8-10	1.8	3-5-5-7			8, 9			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 40%, clay 30%, silt 30%, brown (10 YR 4/3), moist, friable. Several 100% sand lenses 1 to 2-inches thick, light yellowish brown (10 YR 6/4), well sorted.	
10-12	1.2	3-4-5-7			10, 11, 12			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 40%, clay 30%, silt 30%, brown (10 YR 4/3), moist, friable.	

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LITHOLOGIC LOG

BORING/WELL SPOB-12D **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
12-14	1.7	2-4-5-6			13			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 40%, silt 30%, clay 30%, brown (10 YR 4/5), moist, friable. Several 100% sand lenses, 1 to 2-inches thick, light yellowish brown, well sorted.	
14-16	1.1	2-4-6-8			14, 15			***CLAYEY, SILTY SAND (SC-SM)*** very fine sand 50%, silt 25%, clay 25%, brown (10 YR 4/3), moist, slightly cohesive.	
				16	16			***SAND (SP)*** medium sand, yellowish brown (10 YR 5/6), well sorted, moist, loose.	
16-18	1.4	4-4-15-15		17.1	17			***SAND (SP)*** very fine sand, dark reddish brown (10 YR 3/3), iron stain, moist, loose.	
				18.0	18			***SAND (SP)*** medium grained sand, yellowish brown (10 YR 5/4), moist, loose, well sorted.	
18-20	1.2	5-10-10-25			19				
				20.0	20			***SAND AND GRAVEL (SW-GW)*** very coarse gravel 60%, medium to very coarse sand 40%, brown (10 YR 4/3), moist, loose.	
20-22	1.4	3-13-22-33			21				
22-24	1.7	3-13-23-40			22, 23, 24			***SAND AND GRAVEL (SW-GW)*** very coarse gravel 60%, medium to very coarse sand 40%, brown (10 YR 4/3), moist, loose.	

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BORING/WELL SPOB-12D **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND AND GRAVEL (SW-GW) very coarse gravel 60%, medium to very coarse sand 40%, brown (10 YR 4/3), moist, loose.	
24-26	1.8	1-13-22-23			25				
					26			***SAND AND GRAVEL (SW-GW)*** very coarse gravel 60%, medium to very coarse sand 40%, brown (10 YR 4/3), moist, loose.	
26-28	1.6	8-13-22-23			27				
					28			***SAND AND GRAVEL (SW-GW)*** very coarse gravel 60%, medium to very coarse sand 40%, brown (10 YR 4/3), moist, loose.	
28-30	1.9	8-12-16-13			29				
				30.0	30			***SAND (SP)*** coarse sand, moderately well sorted, light yellowish brown (10 YR 6/4), moist, loose.	
30-32	1.7	5-7-13-13			31				
					32			***SAND (SP)*** sand 95%, medium gravel 5%, light yellowish brown (10 YR 6/4), moist, loose.	
32-34	1.6	1-4-12-13			33				
					34			***SAND (SP)*** sand 95%, medium gravel 5%, light yellowish brown (10 YR 6/4), moist, loose.	
34-36	1.2	1-4-8-12			35				
					36				

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BORING/WELL SPOB-12D **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
36-38	1.5	2-5-7-8			37			***SAND (SP)*** sand 95%, medium gravel 5%, light yellowish brown (10 YR 6/4), moist, loose. Grading down to medium fine sand.	
					38			***SAND (SP)*** medium fine to medium grained sand, light yellowish brown (10 YR 6/4), moist, loose.	
38-40	1.4	2-4-8-7			39				
				40.0	40			***SAND AND GRAVEL (SW-SP)*** medium grained sand 90%, very fine to medium gravel 10%, light yellowish bown (10 YR 6/4), moist, loose, moderately sorted.	
40-42	2.0	2-7-11-13			41				
					42			***SAND AND GRAVEL (SW-SP)*** medium grained sand 90%, very fine to medium gravel 10%, light yellowish brown (10 YR 6/4), moist, loose. moderately sorted.	
42-44	2.0	2-7-8-11			43				
				44.0	44			***SAND (SP)*** medium grained sand, light yellowish brown (10 YR 6/4), moist, loose, moderately well sorted.	
44-46	1.8	2-4-8-11			45				
					46			***SAND (SP)*** medium sand, light yellowish brown (10 YR 6/4), moist, loose, moderately well sorted.	
46-48	1.2	3-7-11-10			47				
					48				

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BORING/WELL SPOB-12D **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) medium grained sand, light yellowish brown (10 YR 6/4), wet, moist, moderately well sorted.	
48-50	1.6	35-8-8-12			49				water
					50			***SAND (SP)*** medium grained sand, light yellowish brown (10 YR 6/4), wet, loose, moderately well sorted.	
50-52	2.0	6-12-13-16			51				
					52			***SAND (SP)*** medium grained sand, light yellowish brown (10 YR 6/4), wet, loose, moderately well sorted.	
52-54	2.0	0-1-8-13			53				
					54			***SAND (SP)*** medium grained sand, light yellowish brown (10 YR 6/4), wet, loose, moderately well sorted.	
54-56	2.0	1-9-12-16			55				
					56			no recovery	
56-58	0.0	1-11-14-14			57				
					58			no recovery	
58-60	0.0	0-9-12-11			59				
					60				

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BORING/WELL SPOB-12D **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) medium grained sand, light yellowish brown (10 YR 6/4), wet, loose, moderately well sorted.	
60-62	2.0	1-7-9-12			61				
					62			***SAND (SP)*** medium grained sand, light yellowish brown (10 YR 6/4), wet, loose, moderately well sorted.	
62-64	2.0	12-6-22-25			63				
					64				
					65			End of Borehole	
					66				
					67				
					68				
					69				
					70				
					71				
					72				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 8**
TOTAL DEPTH (ft) 60.5	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 8-2-00 / 8-3-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2"OD Split-Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface ***SANDY, SILTY CLAY (CL-CH)*** clay 60%, fine sand 25%, silt 15%, brown (7.5 TR 4/4), damp, low plasticity but cohesive.	
0-2	1.7	2-4-5-7			1				
					2			***SANDY, SILTY CLAY (CL-CH)*** clay 60%, fine sand 25%, silt 15%, brown (10 YR 4/4), damp. low plasticity but cohesive.	
2-4	1.8	3-7-9-9			3				
				4.2	4			***SANDY, SILTY CLAY (CL-CH)*** clay 60%, fine sand 25%, silt 15%, brown (10 Yr 4/4), damp, low plasticity but cohesive. ***SANDY, SILTY CLAY (CL-CH)*** Alternating layers, 1 to 3-inches thick. Clay 60%, fine sand 25%, silt 15%, brown (10 YR 4/4), damp, low plasticity. Medium grained sand 100%, yellowish brown (10 YR 5/6), damp, very well sorted, loose. 80% of interval is sandy clay.	
4-6	1.2	2-5-7-7			5				
					6			***SANDY, SILTY CLAY (CL-CH)*** Alternating layers, 1 to 3-inches. Clay 60%, fine sand 25%, silt 15%, brown (10 YR 4/4), damp, low plasticity. Medium grained sand 100%, yellowish brown (10 YR 5/6), damp, very well sorted, loose. Interval 80% sandy clay.	
6-8	1.4	2-5-6-6		6.8	7			***SAND, SILT AND CLAY (SW-SC)*** very fine to medium sand 50%, silt 25%, clay 25%, brown (7.5 YR 4/4), cohesive, non-plastic, damp.	
					8				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				8.5				***SAND, SILT, AND CLAY (SW-SC)*** very fine to medium sand, silt 25%, clay 25%, brown (7.5 YR 4/4), cohesive, non-plastic, damp.	
8-10	1.1	3-8-9-12			9			***SAND (SP)*** Medium grained sand, yellowish brown (10 YR 5/6), damp, loose, very well sorted.	
				10	10			***SANDY CLAY AND SAND (SC-SP)*** Alternating layers, 1 to 3-inches thick. Medium grain sand 100%, yellowish brown (10 YR 5/6), very well sorted, damp, loose. Clay 60%, fine sand 25/5, silt 25%, brown (7.5 YR 4/4), damp, low plasticity. Interval 50% sand.	
10-12	2.0	3-5-6-7			11				
					12			***SANDY CLAY AND SAND (SC-SP)*** Alternating layers, 1 to 3-inches thick. Medium grained sand 100%, yellowish brown (10 YR 5/6), damp, very well sorted, loose. Clay 60%, fine sand 25%, silt 25%, brown (7.5 YR 4/4), damp, low plasticity. Interval 70% sand.	
12-14	1.8	3-5-7-7			13				
				14	14			***SANDY CLAY AND SAND (SC-SP)*** Alternating layers, only one sandy clay layer 0.2 inches thick. Medium grain sand 100%, yellowish brown (10 Yr 5/6), damp, very well sorted, loose. Clay 60%, fine sand 25%, silt 15%, brown (7.5 YR 4./4), damp, low plasticity.	
14-16	1.0	7-5-8-7			15				
				16	16				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					17 18 19 20 21 22 23 24			***SAND AND GRAVEL (SW-GW)*** Remainder of boring augered and not sampled. Based on previous/adjacent borings, sand and gravel assumed to depth of 30 feet	

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					25 26 27 28 29			***SAND AND GRAVEL (SW-GW)*** Remainder of boring augered and not sampled. Based on previous/adjacent borings, sand and gravel assumed to depth of 30 feet	
				30	30 31 32			***SAND (SP)*** Remainder of boring augered and not sampled. Based on previous/adjacent borings, assumed to be sand to TD.	

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Remainder of boring augered and not sampled. Based on previous/adjacent borings, assumed to be sand to TD.	
					33				
					34				
					35				
					36				
					37				
					38				
					39				
					40				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Remainder of boring augered and not sampled. Based on previous/adjacent borings, assumed to be sand to TD.	
					41				
					42				
					43				
					44				
					45				Water level
					46				
					47				
					48				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND (SP) Remainder of boring augered and not sampled. Based on previous/adjacent borings, assumed to be sand to TD.	
					49				
					50				
					51				
					52				
					53				
					54				
					55				
					56				

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LITHOLOGIC LOG

BORING/WELL SPOB-15R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					57				
					58				
					59				
					60				
								End of Borehole	
					61				
					62				
					63				
					64				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 9**
TOTAL DEPTH (ft) 49	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 8-4-00 / 8-4-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface ***SILTY CLAY (CH)*** clay 85%, silt 15%, brown (10 YR 4/3), grading downward to yellowish brown (10 Yr 5/4), damp, plastic.	
0-2	1.7	2-2-5-7			1				
					2			***SILTY CLAY (CH)*** clay85%, silt 15%, yellowish brown (10 Yr 5/4), damp, plastic.	
2-4	1.2	3-6-10-12			3				
					4			***SILTY CLAY (CH)*** clay 85%, silt 15%, yellowish brown (10 YR 5/4), damp, plastic.	
4-6	1.1	3-6-13-20			5				
					6				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SILTY CLAY (CH) clay 85%, silt 15%, yellowish brown (10 YR 5/4), damp, plastic.	
6-8	2.0	4-10-13-11			7				
					8			***SILTY CLAY (CH)*** clay 85%, silt 15%, yellowish brown (10 YR 5/4), damp, plastic.	
8-10	2.0	5-8-10-8			9				
				10.0	10			***SILTY, SANDY CLAY (CH-CL)*** clay 80%, silt 15%, very fine to fine sand 5%, yellowish brown (10 YR 5/4), damp, plastic.	
10-12	1.8	4-5-8-10			11				
					12				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				12.2				***SILTY, SANDY CLAY (CH-CL)*** clay 80%, silt 15%, vf-f sand 5%, yel brn (10 YR 5/4), damp, plastic.	
				12.5				***SANDY, SILTY CLAY (CL)*** clay 50%, f-m sand 30%, silt 20%, yel brn (10 YR 5/4), damp, cohesive, non-plastic.	
				12.9				***SILTY, SANDY CLAY (CH-CL)*** clay 80%, silt 15%, vf-fine sand 5%, yel brn (10 YR 5/4), damp, plastic.	
12-14	1.9	4-4-7-7			13			***SANDY, SILTY CLAY (CL)*** clay 50%, f-m sand 30%, silt 20%, yel brn (10 YR 5/4), damp, cohesive, non-plastic.	
				13.6				***SILTY, SANDY CLAY (CH-CL)*** clay 80%, silt 15%, very fine to fine sand 5%, yellowish brown (10 YR 5/4), damp, plastic.	
					14			***SILTY, SANDY CLAY (CH-CL)*** clay 80%, silt 15%, very fine to fine sand 5%, yellowish brown (10 YR 5/4), damp, plastic.	
				14.4				***SANDY, SILTY CLAY (CL)*** clay 50%, f-m sand 30%, silt 20%, yel brn, (10 YR 5/4), damp, cohesive, non-plastic.	
14-16	1.7	2-5-8-5			15				
				15.3				***SILTY CLAY (CH)*** clay 85%, silt 15%, brown (10 YR 4/3), damp, plastic, grading down to yel brn (10 YR 5/4).	
				16.0	16			***CLAYEY, SILTY SAND (SC-CL)*** vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp, cohesive, slightly plastic.	
16-18	1.6	1-5-5-4			17				
					18				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				18.3				***CLAYEY, SILTY SAND (SC-CL)*** vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp, cohesive, slightly plastic.	
				18.5				***SILTY SAND (SM)*** vf-m sand 80%, silt 20%, brown (10 YR 4/3), damp, loose.	
18-20	2.0	2-4-6-6			19			***CLAYEY, SILTY SAND (SC-CL)*** vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp, cohesive, slightly plasic.	
				19.3				***SILTY SAND (SM)*** vf-m sand 80%, silt 20%, brown (10 YR 4/3), damp, loose.	
				20.0	20			***SILTY SAND AND CLAYEY SAND (SM-SC-CL)*** Alternating 1-inch layers. Vf-m sand 80%, silt 30%, brn (10 YR 4/3), damp, loose. Vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp, cohesive, slightly plastic.	
20-22	0.7	5-5-8-8			21				
					22			***SILTY SAND AND CLAYEY SAND (SM-SC-CL)*** Alternating 1-inch layers. Vf-M sand 80%, silt 20%, damp, loose. Vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp cohesive, slightly plastic. Clayey sand 80% of interval.	
22-24	2.0	3-4-5-6			23				
				24.0	24				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				24.3				***CLAYEY, SILTY SAND (SC-CL)*** vf-m sand 40%, clay 30%, silt 30%, dark yel brn (10 YR 4/3), damp, cohesive, slightly plastic.	
								SILTY SAND (SM) Vf-f sand 60%, silt 40%, yellowish brown (10 YR 5/4), damp, loose.	
24-26	2.0	3-4-8-6			25				
					26			***SILTY SAND (SM)*** Vf-f sand 60%, silt 40%, yellowish brown (10 YR 5/4), damp, loose.	
26-28	1.1	7-4-6-7			27				
				28	28			***CLAYEY, SILTY SAND (SC-CL)*** Vf-m sand 40%, clay 30%, silt 30%, light brownish gray (10 YR 6/1) cohesive, slightly plastic. Changes from damp to moist at 29.2.	
28-30	1.8	1-2-3-4			29				
					30				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								CLAYEY, SILTY SAND (SC-CL) Vf-m sand 40%, clay 30%, silt 30%, light brownish gray, (10 YR 6/1), cohesive, slightly plastic, wet.	
30-32	2.0	1-3-5-5			31				
					32			***CLAYEY, SILTY SAND (SC-CL)*** Vf-f sand 40%, clay 30%, silt 30%, light brownish gray (10 YR 6/1), wet, cohesive, slightly plastic	
				32.2				***CLAYEY, SILTY SAND _GRAVEL (SC-SM)*** Vf-vc sand 30%, vf-vc gravel 30%, clay 25%, silt 25%, strong brown (7.5 YR 5/6), damp, friable.	
				32.5				***SAND AND GRAVEL (SW-GW)*** M-vc sand 65%, vf-vc gravel 35%, gray (10 YR 6/1), moist, loose.	
32-34	1.3	2-12-30-36			33				
					34			***SAND AND GRAVEL (SW-GW)*** M-vc sand 65%, vf-vc gravel 35%, gray (10 YR 6/1), moist, loose.	
34-36	1.3	6-17-17-10			35				
					36				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND AND GRAVEL (SW-GW) M-vc sand 65%, vf-vc gravel 35%, gray (10 YR 6/1), wet, loose.	
36-38	1.4	10-12-27-25			37				
					38			***SAND AND GRAVEL*** M-vc sand 65%, vf-vc gravel 35%, gray (10 YR 6/1), wet, loose. Downward to yellowish brown (10 YR 5/4)	
38-40	1.7	3-12-15-15			39				
					40			***SAND AND GRAVEL (SW-GW)*** M-vc sand 65%, vf-vc gravel 35%, yellowish brown (10 YR 5/4), wet loose.	
40-42	1.6	17-32-31-35			41				
					42				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND AND GRAVEL (SW-GW) m-vc sand 65%, vf-vc gravel 35%, gray (10 YR 6/1), wet, loose. grades downward to yellowish brown (10 YR 5/4).	
42-44	0.8	34-18-19-24			43				
					44			***SAND AND GRAVEL (SW-GW)*** m-vc sand 65%, vf-m gravel 35%, yellowish brown (10 YR 5/4), wet, loose.	
44-46	0.6	0-0-0-1			45				
					46			***SAND AND GRAVEL (SW-GW)*** m-vc sand 65%, vf-m gravel 35%, yellowish brown (10 YR 5/4), wet, loose.	
46-48	1.9	1-7-13-17			47				
					48				

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LITHOLOGIC LOG

BORING/WELL SPOB-17R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					49			End of Borehole	
					50				
					51				
					52				
					53				
					54				

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LITHOLOGIC LOG

BORING/WELL SPOB-18R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 6**
TOTAL DEPTH (ft) 50	**BORING DIAM (in)** 6	**START/ COMPLETION DATE** 8-2-00 / 8-3-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING CO. Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					0			Ground Surface	
								SILTY CLAY (CH) clay 80%, silt 20%, dark yellowish brown (10 YR 3/2), damp/dry, friable.	
0-2	1.7	3-5-8-6			1				
					2			***SILTY CLAY (CH)*** clay 75%, silt 25%, dark yellow brown (10 Yr 3/2) grading down to pinkish gray (5 YR 6/2), dry, friable.	
2-4	1.8	8-10-11-10			3				
					4			***SILTY CLAY (CH)*** clay 85%m silt 15%, strong brown (7.5 YR 4/6), damp, plastic.	
4-6	1.5	8-14-16-21			5				
					6			***SILTY CLAY (CH)*** clay 85%, silt 15%, strong brown (7.5 YR 4/6), damp, plastic.	
6-8	1.9	7-12-17-18			7				
					8			***SILTY CLAY (CH)*** clay 85%, silt 15%, strong brown (7.5 YR 4/6), damp, plastic. Lower interval surface gradational.	
8-10	2.0	7-8-10-11		8.8	9			***SANDY, SILTY CLAY (CL)*** clay 50%, fine sand 30%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic.	

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LITHOLOGIC LOG

BORING/WELL SPOB-18R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SANDY, SILTY CLAY (CL) clay 50%, fine sand 30%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic.	
					10			***SANDY, SILTY CLAY (CL)*** clay 40%, fine sand 40%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic.	
10-12	1.1	3-3-8-10			11				
					12			***SANDY, SILTY CLAY (CL)*** clay 40%, fine sand 40%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic.	
				12.8				***SILTY SAND (SM)*** fine sand 70%, silt 30%, dark yellowish brown (10 YR 4/4), moist loose.	
12-14	NA	3-3-5-2			13				
				14.0	14			***SANDY, SILTY CLAY (CL)*** clay 50%, fine sand 30%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic.	
14-16	1.9	1-4-4-3			15				
				16.0	16			***SILTY SAND (SM) AND SANDY CLAY (CL)*** Interbedded, 0.3 feet thick. Clay 40%, sand 40%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic. Sand 70%, silt 30%, dark yellowish brown (10 YR 4/4), moist, loose.	
16-18	1.4	1-5-5-5			17				
					18				

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LITHOLOGIC LOG

BORING/WELL SPOB-18R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
				18.6				***SILTY SAND (SM) AND SANDY CLAY (CL)*** Interbedded, 0.3 feet layers. Clay 40%, fine sand 40%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic. Fine sand 70%, silt 30%, dark yellow brown (10 YR 4/4), moist, loose.	
18-20	1.9	1-4-5-6			19			***SILTY SAND (SW)*** very fine to medium sand 70%, silt 30%, light yellowish brown (10 YR 6/4), moist, loose.	
					20			***SILTY SAND (SW)*** Very fine to medium sand 70%, silt 30%, light yellowish brown (10 YR 6/4), moist, loose.	
20-22	1.8	4-5-5-2			21				
				22.0	22			***SILTY SAND (SM) AND SANDY CLAY (CL)*** Interbedded, 0.3 feet layers. Clay 40%, fine sand 40%, silt 20%, strong brown (7.5 YR 4/6), damp, cohesive, non-plastic. Fine sand 70%, silt 30%, light yel brn (10 YR 4/4, moist, loose.	
22-24	1.9	2-2-5-5			23				
				24.0	24			***SILTY, CLAYEY SAND (SC-SM)*** very fine to medium sand 60%, silt 20%, clay 20%, dark yellowish brown (10 YR 6/4), non-plasitc, slightly cohesive.	
24-26	1.8	4-5-5-6			25				
					26			***SILTY, CLAYEY SAND (SC-SM)*** very fine to medium sand 60%, silt 20%, clay 20%, dark yellow brown (10 YR 6/4), wet, non-plastic, slightly cohesive.	
26-28	1.9	2-2-2-4			27				

Cox-Colvin & Associates, Inc.

LITHOLOGIC LOG

BORING/WELL SPOB-18R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SILTY, CLAYEY SAND (SC-SM) very fine to medium sand 60%, silt 20%, clay 20%, dark yellow brown (10 YR 6/4), wet, non-plastic, slightly cohesive.	
					28			***SILTY, CLAYEY SAND (SC-SM)*** very fine to medium sand 60%, silt 20%, clay 20%, dark yellow brown (10 YR 6/4), wet, non-plastic, slightly cohesive.	
				28.3				***SANDY, SILTY CLAY (CH-CL)*** clay 50%, very fine to medium sand 25%, silt 25%, light brown gray (10 YR 6/2), moist, semi-plastic to non-plastic.	
28-30	2.0	0-3-5-21			29				
				29.5				***SAND AND GRAVEL (GW-SW)*** Very fine to very coarse sand 30% and gravel 60%, silt 10%, dark yellow brn (10 YR 6/4), moist, loose.	
				30.0	30			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, dark yellowish brown (10 YR 6/4), moist, loose.	
30-32	1.6	6-26-31-16			31				
					32			***SAND AND GRAVEL (SW-GW)*** Fine -very coarse sand 70%, very fine to very coarse gravel 30%, dark yellowish brown (10 YR 6/4), moist loose.	
32-34	0.8	1-3-5-4			33				
					34			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, dark yellowish brown (10 Yr 6/4), wet, loose.	Water at 34.7
34-36	1.2	2-4-6-6			35				
					36				

Cox-Colvin & Associates, Inc.
Environmental Services

LITHOLOGIC LOG

BORING/WELL SPOB-18R **PROJECT** South Point RD/RA **SITE** South Point, Ohio
NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
								SAND AND GRAVEL (SW-GW) Fine to very coarse sand 70%, very fine to very coarse gravel 30%, dark yellowish brown (10 YR 6/4), wet loose.	
36-38	1.6	3-6-17-5			37				
					38			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, wet, loose. Color grades downward from dark yellowish brown (10 YR 6/4) to strong brown (7.5 YR 5/6).	
38-40	2.0	10-16-10-31			39				
					40			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, strong brown (7.5 YR 5/6), wet, loose.	
40-42	1.8	20-24-12-10			41				
					42			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, strong brown (7.5 YR 5/6), weet, loose.	
42-44	1.0	0-2-5-5			43				
					44			***SAND AND GRAVEL (SW-GW)*** Fine to very coarse sand 70%, very fine to very coarse gravel 30%, strong brown (7.5 YR 5/6), wet, loose.	
44-46	1.1	0-5-4-5			45				

Cox-Colvin & Associates, Inc.
Environmental Services

LITHOLOGIC LOG

BORING/WELL SPOB-18R **PROJECT** South Point RD/RA **SITE** South Point, Ohio

NOTES

Sample Interval	Recovery (feet)	Blow Count / Hyd Pressure	PID (ppm)	Lithologic Break	Depth	Graphic Log	Sample	Description and Classification	Drilling Notes drilling characteristics, water levels, etc.
					46			***SAND (SW-SP)*** medium to very coarse sand 90%, gravel 10%, brown (10 YR 5/6), wet, loose.	
46-48	2.0	0-5-4-4			47				
					48			***SAND (SW-SP)*** medium to very coarse sand 90%, gravel 10%, brown (10 YR 5/6), wet, loose.	
48-50	2.0	0-5-5-5			49				
					50			End of Borehole	
					51				
					52				
					53				
					54				

Appendix B

Well Construction Logs

Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPMW-11	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 62.5	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8/2/00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** Split Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M Schmidt	
NOTES			

SOIL BORING CROSS REFERENCE	SPMW-11
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/2/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	180
STATIC DEPTH TO WATER (FT)	8/9/00
STATIC DEPTH TO WATER DATE	50.81 below top casing
WELL PURPOSE	Monitoring Well
REMARKS	Allowed native sand to collapse around casing above sand pack
LOGGED BY	M. Schmidt
LOGGED DATE	8/9/00

Stickup of 3.4 feet above ground surface

2" PVC, Schedule 40 riser

Riser backfill = bentonite cement

Top of bentonite seal at 16 feet

Base of bentonite seal at 18 feet

2-inch casing to 52.2 feet

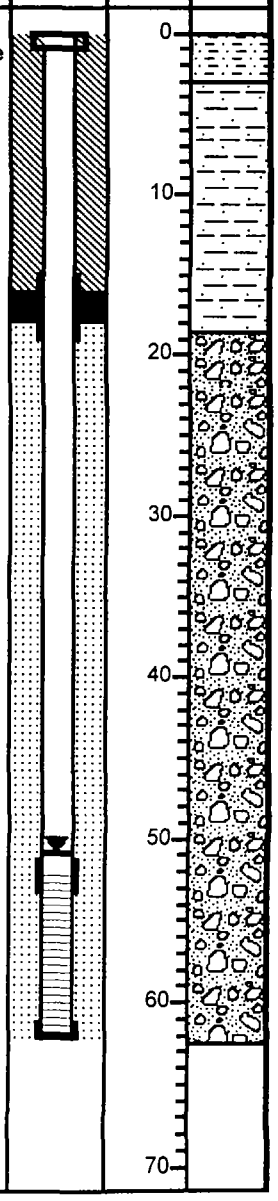
Static water level at 50.81 feet

Top of screen at 52.2 feet

0.010 (#10) slot 2-inch PVC screen

Base of screen at 62.2 feet

Total depth boring 62.5 feet



Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPMW-12	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 62.5	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-1-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2" OD Split-Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS-REFERENCE	SPMW-12
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/1/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	222
STATIC DEPTH TO WATER DATE	8/9/00
STATIC DEPTH TO WATER (feet)	49.99 below casing surface
WELL PURPOSE	Monitoring well
REMARKS	Pulled casing and allowed native sand to fill above 47.5 feet to base of seal
LOGGED BY	M. Schmidt
LOGGED DATE	8/9/00

Stickup = 2.45 feet

2" PVC, Schedule 40 riser

Riser backfill = bentonite cement

Top of bentonite seal at 14 feet

Base of bentonite seal at 18 feet

2-inch casing to 52.2 feet

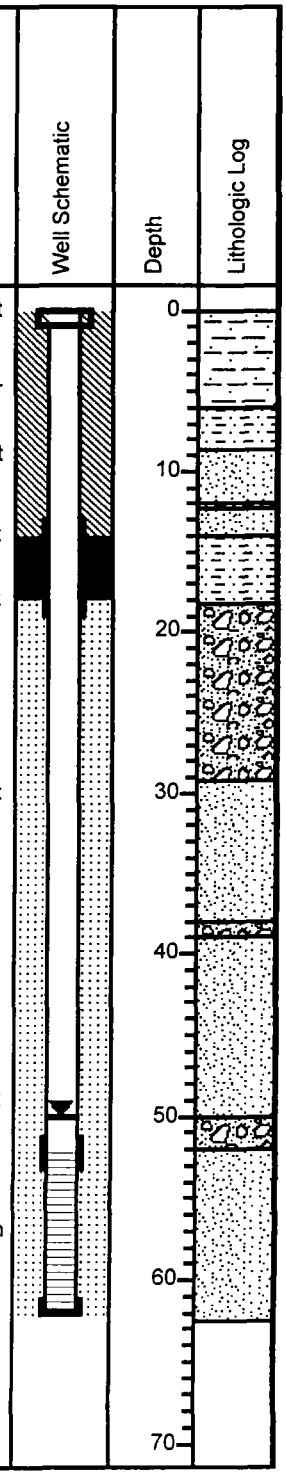
Static water level at 49.99 feet

Top of screen at 52.2 feet

0.010 (#10) slot 2-inch PVC screen

Bottom of screen at 62.2 feet

Total boring depth 62.5 feet

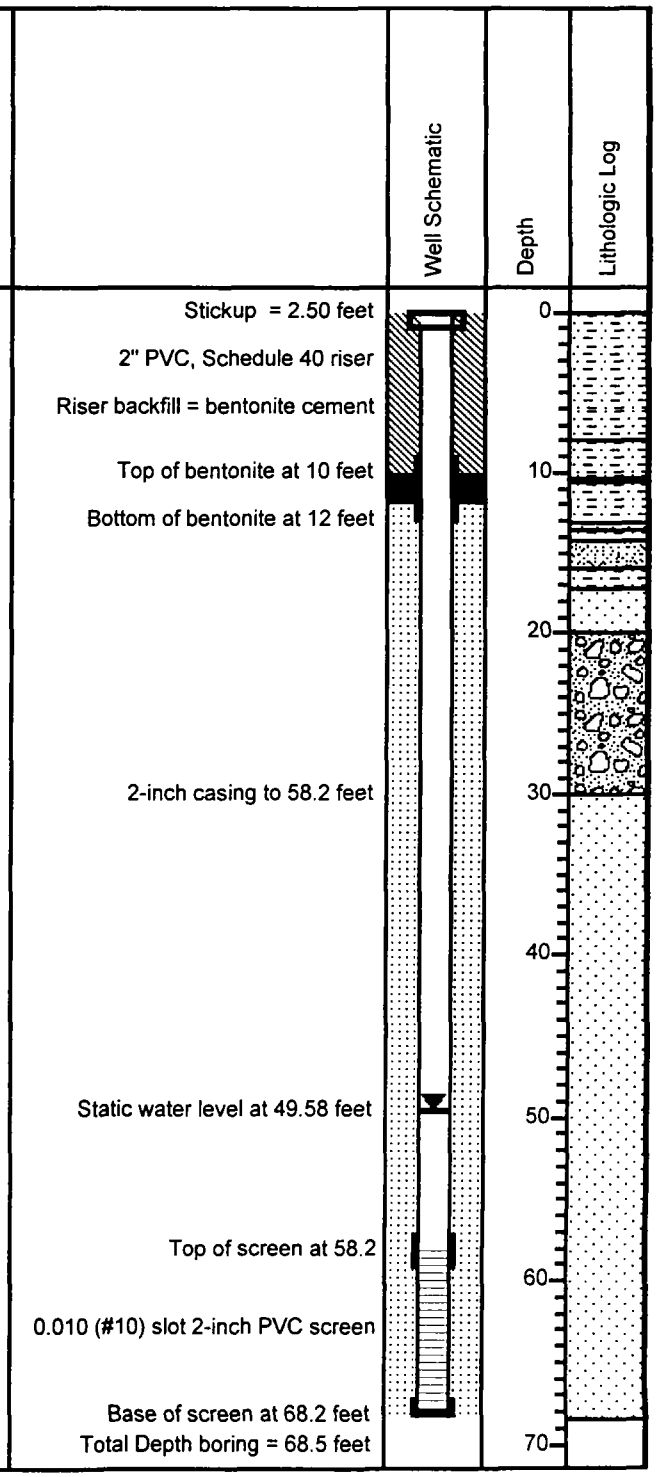


Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPMW-13	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 68.9	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-2-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A. Dudley / K. Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS REFERENCE	SPMW-13
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/2/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	258
STATIC DEPTH TO WATER DATE	8/9/00
STATIC DEPTH TO WATER (feet)	49.58
WELL PURPOSE	Monitoring Well
REMARKS	Allowed native sand to collapse around inner casing between top of sand pack and base of seal.
LOGGED BY	M. Schmidt
LOGGED DATE	8/9/00



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Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPOB-12R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 65	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-1-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split Spoon	
DRILLING COMPANY Belasco	**DRILLER/HELPER** A. Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS-REFERENCE	SPOB-12D
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/1/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	182
STATIC DEPTH TO WATER DATE	8/9/00
STATIC DEPTH TO WATER (feet)	51.43 below top PVC casing
WELL PURPOSE	Observation Well. Replaces SPOB-12S, SPOB-12D
REMARKS	Sand pack in screened interval, native sand collapse between screen and bentonite seal.
LOGGED BY	M. Schmidt
LOGGED DATE	8/9/00

Stickup = 2.6 ft above ground level

2" PVC, Schedule 40 riser

Riser backfill of bentonite cement

Top of bentonite seal at 14 feet

Bottom of bentonite seal at 16 feet

2-inch casing to 54.7 feet

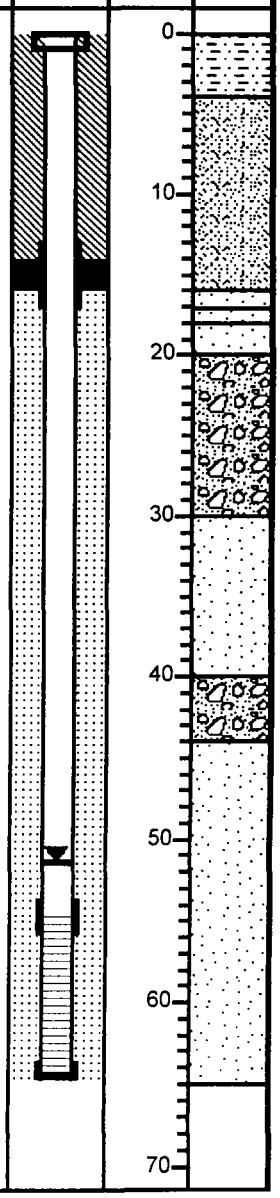
Static water level at 51.43 feet

Top of screen at 54.7 feet

0.010 (#10) slot 2-inch PVC screen

Bottom of screen at 64.7 feet

Total depth boring at 65 feet



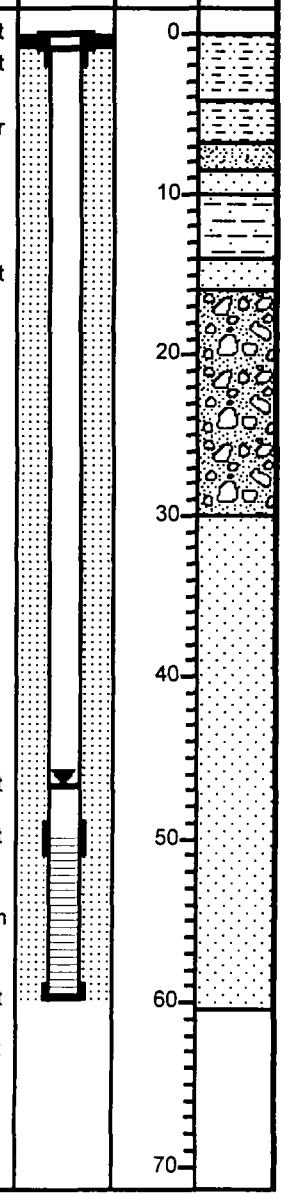
Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPOB-15R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 60.5	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-3-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2"OD Split-Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS-REFERENCE	SPOB-15R
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/3/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	204
STATIC DEPTH TO WATER DATE	8/10/00
STATIC DEPTH TO WATER (feet)	46.76 below top casing
WELL PURPOSE	Observation well, replaces SPOB-15S, 15D
REMARKS	Sand pack to 47 feet, native sand allowed allowed to collapse in between sand pack and seal
LOGGED BY	M. Schmidt
LOGGED DATE	8/10/00

Stickup = 2.5 feet
Base of bentonite at 1 feet
2" PVC, Schedule 40 riser
2-inch casing to 49.9 feet
Static water level at 46.76 feet
Top of screen at 49.9 feet
0.010 (#10) slot 2-inch PVC screen
Bottom of screen at 59.9 feet
Total depth boring 60.2 feet

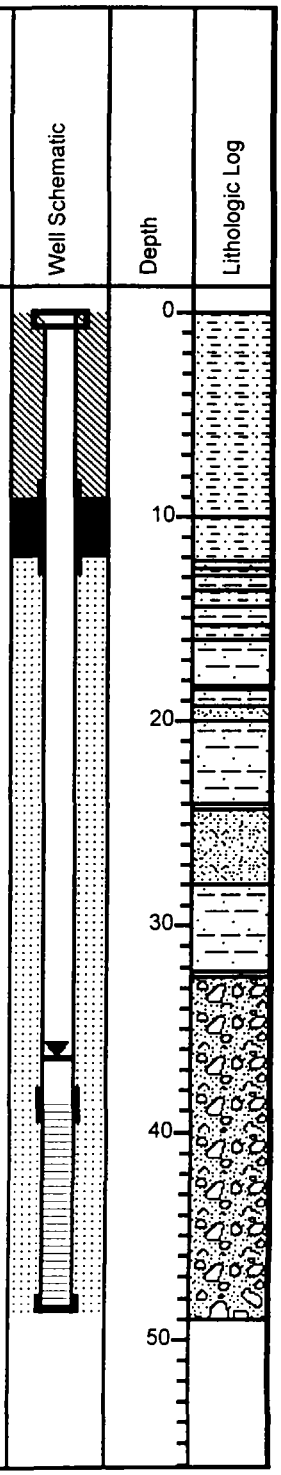


Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPOB-17R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 49	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-4-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS-REFERENCE	SPOB-17R
TOWN/CITY	South Point
COUNTY/STATE	Ohio
INSTALLATION DATE(S)	8/4/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DURING DEVELOPMENT (gals)	391
STATIC DEPTH TO WATER DATE	8/7/00
STATIC DEPTH TO WATER (feet)	36.41
WELL PURPOSE	Observation well, replaces SPOB-17S and 17D
REMARKS	Sand pack 38-49 feet, collapsed sand to 28 feet, #5 sand from 12-28 feet
LOGGED BY	M. Schmidt
LOGGED DATE	8/7/00

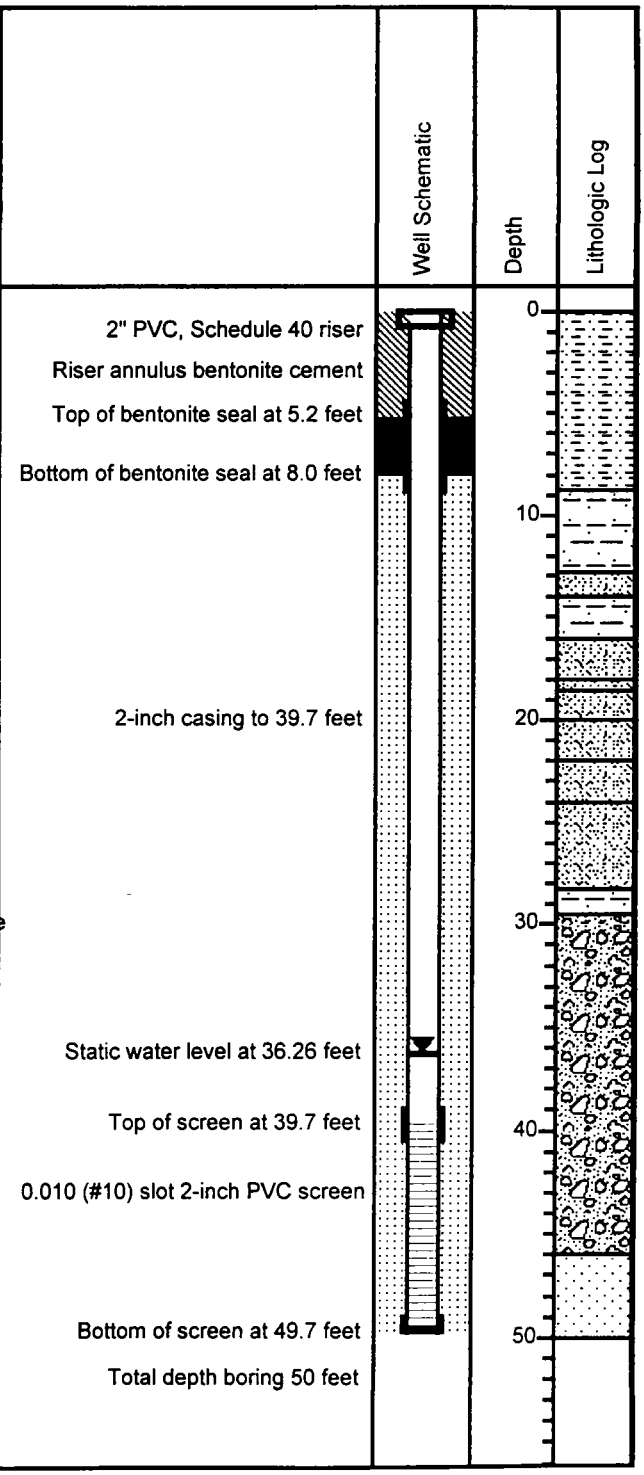


Cox-Colvin & Associates, Inc.
Environmental Services

WELL CONSTRUCTION LOG

BORING/WELL SPOB-18R	**PROJECT** South Point RD/RA	**SITE** South Point, Ohio	**Page 1 of 1**
BORING DEPTH (ft) 50	**BORING DIAM (in)** 6	**BORING COMPLETION DATE** 8-3-00	
SAMPLING INTERVAL 2 ft	**DRILLING METHOD** HSA	**SAMPLING DEVICE** 2 ft, 2" OD Split-Spoon	
DRILLIING COMPANY Belasco	**DRILLER/HELPER** A Dudley / K Little	**LOGGED BY** M. Schmidt	
NOTES			

SOIL BORING CROSS-REFERENCE	SPOB-18R
TOWN/CITY	South Point
COUNTY AND STATE	Ohio
INSTALLATION DATE(S)	8/3/00
DEVELOPMENT TECHNIQUE	Grundfos Pump
FLUID LOSS DURING DRILLING (gals)	NA
WATER REMOVED DUIRNG DEVELOPMENT (gals)	398
STATIC DETPTH TO WATER DATE	8/7/00
STATIC DEPTH TO WATER (feet)	36.26 below casing surface
WELL PURPOSE	Replacement observation well
REMARKS	Added #5 sand, since native sand less clean Collapsed sand between 37.8 and 15 feet.
LOGGED BY	M. Schmidt
LOGGED DATE	8/7/00



Appendix C

Well Development Logs

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: Equity Point RD/RA
Well ID: ~~S1~~ T2-B
Date: 8-10-00
Developed by: M Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 18.52
Duplicate Depth to Water (ft.): 18.52
Total Sounded Depth (ft.): 41.06
Water Column in Well (ft.): ~~44~~ 22.54
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.61
Pumping Depth to Water (ft.): 18.52
Total Volume Developed (Gal.): 258

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.01 at 27.2 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.0 at " °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 27.2 °C °F
Reading 1415 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	US Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
16:17	0	0	6.33	401	16.1			Extremely sandy, muddy 6 gpm
16:24	42	42	6.25	448	13.6			" " " "
16:30	36	78	6.24	449	13.2			" " " "
16:37	42	120	6.24	474	13.2			Sandy, muddy, 6 GPM
16:43	42	162	6.24	462	12.9			Sandy, cloudy, 6 GPM
16:50	42	204	6.29	322	12.9			" " "
16:56	36	240	6.28	304	12.8			sl. sandy, 6 GPM
16:59	18	258	6.29	299	12.8			" "
								44.5 TD after level

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Pond RI/FS
Well ID: T2C
Date: 8-11-00
Developed by: M Schmidt

Technique: Grundfos pump
Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 53.35
Duplicate Depth to Water (ft.): 53.35
Total Sounded Depth (ft.): 77.07
Water Column in Well (ft.): 23.72
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.8
Pumping Depth to Water (ft.): 53.35
Total Volume Developed (Gal.): 186

Instrument Calibration:

pH Meter ID: Oakton 84554
pH 4.0 = 4.02 at 21.2 °C °F
pH 7.0 = 7.01 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 21.2 °C °F
Reading " (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond. (µS)	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction	
12:54	0	0	6.06	330	18.4			brown, muddy, slightly sandy	6 gpm
12:59	30	30	6.18	362	15.5			" " "	"
13:06	42	72	6.14	369	13.6			" " "	"
13:13	42	114	6.14	390	13.4			pale brown after surging	6 GPM
13:19	36	150	6.22	379	13.2			" " "	"
13:25	36	186	6.13	384	13.1			" " "	

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Environmental Services

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPMW-01
Date: 8-7-00
Developed by: M. Schmidt
G. Lawrence

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 38.63
Duplicate Depth to Water (ft.): 38.63
Total Sounded Depth (ft.): 60.51
Water Column in Well (ft.): 21.88
Casing Diameter (in.): 2
Gal./ft: 1.16 Well Volume (Gal.): 3.50
Pumping Depth to Water (ft.): 38
Total Volume Developed (Gal.):

Instrument Calibration:

pH Meter ID: Oaktons/N 34554
pH 4.0 = 4.00 at 22.5 °C °F
pH 7.0 = 7.02 at " °C °F
pH 10.0 = 10.04 at " °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 22.6 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
12:06	0	0	6.35	333	19.1	-	-	fine sand, muddy 2.5 gpm
12:20	35	35	6.26	321	15.9	-	-	" " increase to 6 gpm
12:27	42	77	6.18	318	14.9			less sand & mud, 6 gpm
12:39	66	143	6.22	323	15.3			6 gpm
12:47	48	191	6.19	326	15.3			6 gpm, stepped up to 8.6 gpm
12:52	43	234	6.24	321	14.8			8.6 GPM
12:58	52	286	6.24	330	14.5			8.6 gpm clearing
13:06	69	355	6.11	325	14.2			" "
13:08	17	372	6.10	330	14.4			" "

~ 2.5 gpm initial

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RD/RA

Page 1 of 1

Well ID: MW-02

Date: 8-8-00

Developed by: [illegible]
G Lawrence

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Initial Depth to Water (ft.): 48.79
Duplicate Depth to Water (ft.): 48.79
Total Sounded Depth (ft.): 74.96
Water Column in Well (ft.): 26.17
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 4.19
Pumping Depth to Water (ft.): 48.79
Total Volume Developed (Gal.): 74

Instrument Calibration:

pH Meter ID: 34554
pH 4.0 = 4.00 at 24.5 °C/°F
pH 7.0 = 7.02 at 24.4 °C/°F
pH 10.0 = 10.04 at 24.5 °C/°F

Specific Conductance Meter ID: —
Standard 1413 (umhos/cm) at 24.4 °C/°F
Reading 1412 (umhos/cm) at " °C/°F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
16:17	0	0	6.81	759	17.3			sl. muddy 6.7 gpm
16:23	40	40	6.33	850	15.0			clear 6.7 gpm
16:27	27	67	6.33	875	14.9			clear "
16:31	27	94	6.32	877	14.6			" "

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPMW-03
Date: 8-9-00
Developed by: M Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 45.65
Duplicate Depth to Water (ft.): 45.65
Total Sounded Depth (ft.): 67.33
Water Column in Well (ft.): 21.68
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.46
Pumping Depth to Water (ft.): 45.65
Total Volume Developed (Gal.): 258

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.0 at 24.5 °C °F
pH 7.0 = 7.02 at " °C °F
pH 10.0 = 10.03 at " °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 24.5 °C °F
Reading 1413 (umhos/cm) at 24.5 °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
11:50	6	0	6.50	570	18.6			slightly muddy, sandy, 6 gpm
11:56	36	36	6.47	564	18.0			" " " "
12:02	36	72	6.41	560	17.1			" " " "
12:12	60	132	6.39	549	16.4			" " " "
12:20	48	180	6.41	542	15.9			" " " "
12:25	30	210	6.38	539	14.5			" " " "
12:33	48	258	6.37	538	14.5			" " " "

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RDIRA

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Well ID: SPMW-04

Date: 8-11-00

Developed by: M Schandt

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47 4 in. = 0.65 8 in. = 2.61

Initial Depth to Water (ft.): 50.77

Duplicate Depth to Water (ft.): 50.77

Total Sounded Depth (ft.): 66.78

Water Column in Well (ft.): 16.01

Casing Diameter (in.): 2

Gal./ft: .16 Well Volume (Gal.): 2.56

Pumping Depth to Water (ft.): 50.77

Total Volume Developed (Gal.): 170

Instrument Calibration:

pH Meter ID: Oakton 34554

pH 4.0 = 4.02 at 21.2 °C °F

pH 7.0 = 7.01 at " °C °F

pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: "

Standard 1413 (umhos/cm) at 21.2 °C °F

Reading " (umhos/cm) at " °C °F

DO Meter ID: —

Calibrated?:

Turbidity Meter ID: —

Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
8:46	0	0	6.30	421	17.0			cloudy brown, no sand 6 GPM
8:52	36	36	6.25	417	19.6			slightly cloudy, no sand "
8:57	30	66	6.31	420	14.4			clear, 6 GPM
9:03	48	134	6.31	424	14.4			" "
9:09	36	170	6.31	421	14.4			" "

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: Soap Point RDRA
Well ID: SPRW-05
Date: 8-10-06
Developed by: R. Schmidt

Technique: Grundfos pump
Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 63.01
Duplicate Depth to Water (ft.): 63.01
Total Sounded Depth (ft.): 85.72
Water Column in Well (ft.): 22.71
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.63
Pumping Depth to Water (ft.): 63.01
Total Volume Developed (Gal.): 138

Instrument Calibration:

pH Meter ID: Orion 34554
pH 4.0 = 4.01 at 25.8 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: —
Standard 1413 (umhos/cm) at 26.2 °C °F
Reading 1410 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
9:07	0	0	6.93	402	16.3			slightly very muddy, sandy, 6 gpm
9:08	12	12	7.12	377	14.4			clear, sandy, 6 gpm
9:14	36	48	7.18	401	13.6			" " "
9:19	30	78	7.20	460	13.5			" less sand "
9:25	36	114	7.21	399	13.3			clear, sl. sandy, 6 gpm
9:29	24	138	7.20	390	13.2			" " "

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: South Point Hold A
Well ID: SPMW-07
Date: 8-8-00
Developed by: [illegible] Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 44.92
Duplicate Depth to Water (ft.): 44.92
Total Sounded Depth (ft.): 67.16
Water Column in Well (ft.): 22.3
Casing Diameter (in.): 2
Gal./ft.: .16 Well Volume (Gal.): 3.56
Pumping Depth to Water (ft.): 44.92
Total Volume Developed (Gal.): 172

Instrument Calibration:

pH Meter ID: 34554
pH 4.0 = 4.00 at 24.5 °C °F
pH 7.0 = 7.02 at 24.4 °C °F
pH 10.0 = 10.04 at 24.5 °C °F

Specific Conductance Meter ID: 4
Standard 1413 (umhos/cm) at 24.4 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	GS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
~~14:34~~	~~0~~	~~0~~						~~7 gpm~~
15:07	0	0	7.10	1491	18.3			clear, sl. sandy 7.5 gpm
1515	60	60	6.93	1415	16.8			clear 7.5 gpm
1522	37	97	6.93	1519	16.4			clear "
15:26	30	127	6.94	1532	15.8			" "
15:32	45	172	7.01	1527	15.7			" "

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Road RD/RA
Well ID: SPMW-09
Date: 8-8-00
Developed by: M Schmidt
S Laurence
Technique: Grundfos pump
Disposal fate of Development Water: Ground Surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 43.29
Duplicate Depth to Water (ft.): 43.29
Total Sounded Depth (ft.): 66.60
Water Column in Well (ft.): 23.31
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.73
Pumping Depth to Water (ft.): 43.29
Total Volume Developed (Gal.): 18

Instrument Calibration:

pH Meter ID: 34554
pH 4.0 = 4.00 at 24.5 °C °F
pH 7.0 = 7.02 at 24.4 °C °F
pH 10.0 = 10.04 at 24.5 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 24.4 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction	
17:45	0	0	6.70	982	17.2			sl. muddy, v sandy	6.7 gpm
17:54	47	47	6.50	866	14.5			slightly brn, sl. sandy	6.7 gpm
17:50	40	87	6.62	832	14.3			clear, very minor sand	6.7 gpm
18:05	47	134	6.46	808	14.0			" " no sand	6.7 gpm
18:12	47	181	6.52	815	14.0			" " "	"

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RO/RA
Well ID: SOMW-09
Date: 3-10-00
Developed by: M Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 41.20
Duplicate Depth to Water (ft.): 41.20
Total Sounded Depth (ft.): 60.03
Water Column in Well (ft.): 19.0
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.04
Pumping Depth to Water (ft.): 41.20
Total Volume Developed (Gal.): 234

Instrument Calibration:

pH Meter ID: 34554
pH 4.0 = 4.01 at 27.2 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 27.2 °C °F
Reading 1415 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
18:34	0	0	4.47	959	16.4			bright orange, sandy, 6 gpm
18:42	48	48	4.37	1024	14.4			" " " "
18:52	60	108	4.41	1098	13.4			cloudy orange, somewhat sandy
19:00	48	156	4.37	1123	13.0			slightly cloudy, sl. sandy
19:07	42	198	4.36	1136	13.0			" " "
19:13	36	234	4.35	1145	13.0			clear 6 gpm

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: South Pt. RD/RA
Well ID: SPMW-10
Date: 8-8-00
Developed by: M Schmidt
G Lawrence
Technique: Grundfos pump

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Initial Depth to Water (ft.): 63.27
Duplicate Depth to Water (ft.): 63.27
Total Sounded Depth (ft.): 89.30
Water Column in Well (ft.): 26.03
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 4.16
Pumping Depth to Water (ft.): —
Total Volume Developed (Gal.): —

Disposal fate of Development Water: —
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Instrument Calibration:

pH Meter ID: 34554
pH 4.0 = 4.00 at 24.5 °C °F
pH 7.0 = 7.02 at 24.4 °C °F
pH 10.0 = 10.04 at 24.5 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 24.4 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
								Could not access through bent casing

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: ~~SP MW-11~~ South Point RDAA

Page 1 of 1

Well ID: SP MW-11

Date: 8-9-00

Developed by: M. Schad

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47 4 in. = 0.65 8 in. = 2.61

Initial Depth to Water (ft.): 50.81

Duplicate Depth to Water (ft.): 50.81

Total Sounded Depth (ft.): 64.39

Water Column in Well (ft.): 13.58

Casing Diameter (in.): 2

Gal./ft: .16 Well Volume (Gal.): 2.17

Pumping Depth to Water (ft.): 50.81

Total Volume Developed (Gal.): 180

Instrument Calibration:

pH Meter ID: Orion 34554

pH 4.0 = 4.00 at 27.5 °C °F

pH 7.0 = 7.02 at 27.4 °C °F

pH 10.0 = 10.04 at 27.5 °C °F

Specific Conductance Meter ID: 11

Standard 1413 (umhos/cm) at 27.6 °C °F

Reading 1412 (umhos/cm) at 27.6 °C °F

DO Meter ID: —

Calibrated?: —

Turbidity Meter ID: —

Calibrated?: —

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
16:22	0	0	6.39	518	17.0			Brown, muddy, sandy 6 gpm
16:28	36	36	6.15	490	14.9			" " " 6 gpm
16:34	36	72	6.09	491	14.5			pale brown, 6 gpm
16:40	36	108	6.03	478	14.2			" " "
16:46	36	144	6.05	488	14.4			" " "
16:52	36	180	6.03	486	14.4			" " "

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RP/RA
Well ID: SP4W-12
Date: 8-9-00
Developed by: M Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 49.99
Duplicate Depth to Water (ft.): 49.99
Total Sounded Depth (ft.): 65.05
Water Column in Well (ft.): 15.06
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 2.41
Pumping Depth to Water (ft.): 49.99
Total Volume Developed (Gal.): 222

Instrument Calibration:

pH Meter ID: Orion 34554
pH 4.0 = 4.00 at 27.5 °C °F
pH 7.0 = 7.02 at 27.4 °C °F
pH 10.0 = 10.04 at 27.5 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 27.6 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
17:09	0	0	6.52	548	17.2			v brown, muddy, sandy 6 gpm
17:18	54	54	6.43	516	15.3			" " " "
17:25	42	96	6.30	502	14.3			clear, sl. muddy on purging, 6 GPM
17:34	54	150	6.27	502	14.1			" " "
17:43	54	204	6.28	503	14.0			" " "
17:46	18	222	6.24	502	14.0			" " clear 6 GPM

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point ROTA SPOB-12 Replacement
Well ID: SPOB-12 Replacement
Date: 8-9-00
Developed by: M Schmidt

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Initial Depth to Water (ft.): 51.43
Duplicate Depth to Water (ft.): 51.43
Total Sounded Depth (ft.): 67.74
Water Column in Well (ft.): 16.31
Casing Diameter (in.): 2
Gal./ft.: 16 Well Volume (Gal.): 2.61
Pumping Depth to Water (ft.): 51.43
Total Volume Developed (Gal.): 182

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.00 at 27.5 °C °F
pH 7.0 = 7.02 at 27.4 °C °F
pH 10.0 = 10.04 at 27.5 °C °F

Specific Conductance Meter ID: 4
Standard 1413 (umhos/cm) at 27.6 °C °F
Reading 1412 (umhos/cm) at 27.6 °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
14:24	0	0	6.43	826	19.3			Muddy, sandy 5 gpm
14:35	45	45	6.44	804	17.4			clear, muddy when purging 4.3 gpm
14:43	34	79	6.54	808	15.9			" " "
14:53	43	122	6.50	807	15.2			clear, sl. muddy when purging, 4.3 gpm
15:01	34	156	6.47	804	14.9			clear 4.3 gpm
15:07	26	182	6.47	802	14.9			clear "

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project:
Well ID: SPMW-13
Date: 8-9-00
Developed by: M Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground Surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 49.58
Duplicate Depth to Water (ft.): 49.58
Total Sounded Depth (ft.): 70.98
Water Column in Well (ft.): 21.4
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 3.42
Pumping Depth to Water (ft.): 49.58
Total Volume Developed (Gal.): 258

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.04 at 27.5 °C °F
pH 7.0 = 7.02 at 27.4 °C °F
pH 10.0 = 10.04 at 27.3 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 27.6 °C °F
Reading 1412 (umhos/cm) at 27.6 °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID:
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
18:22	0	0	7.11	486	16.1			✓ brown, muddy, sandy 6 gpm
18:29	42	42	7.00	481	14.7			" " " "
18:36	42	84	6.94	477	14.0			cloudy brn, 6 gpm
18:44	48	132	6.93	476	14.0			" " "
18:50	36	168	6.98	479	13.9			" " "
18:56	36	204	6.93	476	13.9			" " "
19:05	54	258	6.94	476	13.9			" " "

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPOB-15
Date: 8-18-00
Developed by: M Gabrielt

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 46.76
Duplicate Depth to Water (ft.): 46.76
Total Sounded Depth (ft.): 62.54
Water Column in Well (ft.): 15.78
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 2.52
Pumping Depth to Water (ft.): 46.76
Total Volume Developed (Gal.): 204

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.01 at 25.8 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: 41
Standard 1413 (umhos/cm) at 26.2 °C °F
Reading 1410 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
12:12	0	0	7.12	1770	23.2			Muddy, Sandy, 6.0 GPM
12:16	24	24	7.14	1840	21.8			" " "
12:21	30	54	7.16	1160	18.5			" " "
12:26	30	84	7.17	2310	17.3			" " "
12:32	36	120	6.23	677	15.7			cloudy, sandy, 6 GPM
12:36	24	144	6.21	675	15.6			" " "
12:42	36	180	6.18	674	15.7			slightly sandy 6 GPM
12:46	24	204	6.18	677	15.8			" " "

* Forgot to remove protective cap from pH/cond meter. First 4 readings not valid.

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: Sand Point RD/RA
Well ID: SPOB-17 Redrill
Date: 8-7-00
Developed by: A. Sandt
Technique: Grundfos pump
Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47 4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 36.41
Duplicate Depth to Water (ft.): 36.41
Total Sounded Depth (ft.): 51.45
Water Column in Well (ft.): 15.04
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 2.4
Pumping Depth to Water (ft.): 51.5
Total Volume Developed (Gal.): 400

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.00 at 22.5 °C °F
pH 7.0 = 7.02 at 22.4 °C °F
pH 10.0 = 10.04 at 22.5 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 22.6 °C °F
Reading 1412 (umhos/cm) at 22.6 °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	uS Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction	
8:53	0	0	5.86	536	16.5	—	—	brown, very muddy	7.5 gpm
8:57	30	30	6.06	509	15.4			" " "	7.5 gpm
9:05	60	90	6.11	508	14.5			" " "	
9:11	45	135	6.08	512	14.3			" " "	
9:18	52	187	6.08	511	14.2			pale brown " " cleaning up	
9:25	52	239	6.03	511	14.3			pale brown, no mud	
9:32	52	291	6.09	513	14.3			" " " "	7.5 gpm

Cox-Colvin & Associates, Inc.
Environmental Services

Monitor Well Development Log

Project: South Pond R O/RA
Well ID: SPOB-18
Date: 8-7-06
Developed by: M S. Gmid
G Lawrence
Technique: Grundfos pump
Disposal fate of Development Water: Ground surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

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Initial Depth to Water (ft.): 36.26
Duplicate Depth to Water (ft.): 36.26
Total Sounded Depth (ft.): 52.75
Water Column in Well (ft.): 16.49
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 2.63
Pumping Depth to Water (ft.): 36.0
Total Volume Developed (Gal.): 398

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 3.97 at 31.5 °C °F
pH 7.0 = 6.98 at 31.8 °C °F
pH 10.0 = 9.90 at 32.9 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 34.4 °C °F
Reading 1414 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction	
15:25	0	0	5.98	603	16.8	—	—	very muddy	7.26 gpm
15:32	50	50	6.13	655	15.2			" "	7.56 gpm
15:43	81	131	6.67	549	17.7			" "	7.4 gpm
15:51	59	190	6.05	638	14.7			clearing up	7.4
16:02	74	264	5.99	649	14.7			"	6.7 gpm
16:14	87	351	6.00	647	14.5			"	"
16:21	47	398	6.00	6.45	14.5			"	"

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPOB-26
Date: 8-10-00
Developed by: LS Schmidt

Technique: Grundfos pump

Disposal fate of Development Water: Ground surface

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 35.98
Duplicate Depth to Water (ft.): 35.98
Total Sounded Depth (ft.): 64.03
Water Column in Well (ft.): 28.05
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 4.49
Pumping Depth to Water (ft.): 35.98
Total Volume Developed (Gal.): 112

Instrument Calibration:

pH Meter ID: Orion 34554
pH 4.0 = 4.01 at 23.8 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID: 4
Standard 1413 (umhos/cm) at 26.2 °C °F
Reading 1410 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
11:19	0	0	6.85	706	17.8			Sandy, cloudy, brown 6 GPM
11:26	42	42	6.94	761	14.6			Sandy, clear, 6 GPM
11:32	36	78	6.93	747	14.2			Sandy, clear 6 GPM
11:38	36	114	6.93	732	14.2			Somewhat sand, clear, 6 GPM
11:41	18	132	6.92	766	14.1			" " " "
11:46	30	162	6.92	756	14.1			Sl. sandy, clear 6 GPM

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPOB-29
Date: 8-10-01
Developed by: M S. Gmidt

Technique: Grundfos pump

Disposal fate of Development Water: —

Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 44.18
Duplicate Depth to Water (ft.): ~~77.08~~ 44.18
Total Sounded Depth (ft.): 77.08
Water Column in Well (ft.): 32.90
Casing Diameter (in.): 2
Gal./ft: .16 Well Volume (Gal.): 5.26
Pumping Depth to Water (ft.): 44.16
Total Volume Developed (Gal.): 0

Instrument Calibration:

pH Meter ID: Oakton 34154
pH 4.0 = 4.01 at 25.8 °C °F
pH 7.0 = 7.00 at " °C °F
pH 10.0 = 10.00 at " °C °F

Specific Conductance Meter ID:
Standard 1413 (umhos/cm) at 26.2 °C °F
Reading 1410 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
10:35	0	0	—	—	—	—		Cannot access. Pump will not
								enter beyond ~ 3 ft.

Cox-Colvin & Associates, Inc.

Monitor Well Development Log

Project: South Point RD/RA
Well ID: SPOB-34
Date: 8-8-00
Developed by: P. Schmidt

Technique: Grundfos pump
Disposal fate of Development Water: Ground Surface
Well Casing Volumes (Gal./ft.): 2 in. = 0.16 6 in. = 1.47
4 in. = 0.65 8 in. = 2.61

Page 1 of 1

Initial Depth to Water (ft.): 48.85
Duplicate Depth to Water (ft.): 48.85
Total Sounded Depth (ft.): 81.95
Water Column in Well (ft.): 33.1
Casing Diameter (in.): 2 in
Gal./ft: .16 Well Volume (Gal.): 5.3
Pumping Depth to Water (ft.): 48.80
Total Volume Developed (Gal.): 198

Instrument Calibration:

pH Meter ID: Oakton 34554
pH 4.0 = 4.0 at 22.5 °C °F
pH 7.0 = 7.02 at 22.4 °C °F
pH 10.0 = 10.04 at 22.5 °C °F

Specific Conductance Meter ID: "
Standard 1413 (umhos/cm) at 22.6 °C °F
Reading 1412 (umhos/cm) at " °C °F

DO Meter ID: —
Calibrated?:

Turbidity Meter ID: —
Calibrated?:

Time	Interval Volume Purged	Cum. Volume Purged	pH	u-S Specific Cond.	Temp. (C) or (F)	Turbidity (NTU)	DO (mg/l)	Comments Color, Unusual recharge rates, Equipment malfunction
11:15	0	0	7.10	735	20.0			black sandy 6gpm
11:23	48	48	7.31	822	16.8			clear 6gpm
11:30	42	90	7.36	832	16.1			" "
11:36	36	126	7.36	837	15.9			" "
11:43	42	168	7.36	837	15.9			" "
11:48	30	198	7.36	837	15.9			" "

Appendix D

Water Sampling Logs

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. ST MW-01 REPLICATE NO. - DATE 4-17-00
WEATHER Raining, 65°F Time BEGAN 10:30 Time COMPLETED 11:47

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION X MSL
TOTAL SOUNDED DEPTH OF WELL BELOW MP 80.50
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP ~~84.5~~ 38.12
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 42.38
CALCULATED 21.5 Actual 22
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 6.8
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color ~~Clear~~ brown ODOR None APPEARANCE ~~clear~~ muddy somewhat TEMPERATURE 14.2 °F/°C
OTHER (SPECIFIC ION: OVA: HNU: ETC.)
CONDUCTIVITY - UMHOS/CM 355 PH 6.56
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	°C	Cond uS
7.06	14.5	401
6.80	14.4	372
6.69	14.3	366
6.56	14.2	355

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Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RI/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SP MW-02 REPLICATE NO. — DATE 4-17-00
WEATHER Raining, 65°F TIME BEGAN 12:20 TIME COMPLETED 13:15

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE _____ MP ELEVATION _____
TOTAL SOUNDED DEPTH OF WELL BELOW MP 84.50 WATER-LEVEL ELEVATION _____
DEPTH TO WATER BELOW MP 48.81 DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 35.69 CALCULATED 17.5 Actual 18
GALLONS PER FOOT .16 Sampling Pump Intake Setting
GALLONS IN WELL 5.7 (FEET BELOW LAND SURFACE) _____
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color pale yellow ODOR none APPEARANCE cloudy TEMPERATURE 14.6 °F (°C)
OTHER (SPECIFIC ION; OVA; HNU; ETC.) _____
CONDUCTIVITY - UMHOS/CM 1233 pH 6.77
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS _____
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	T °C	Cond
11.25	16.7	608 uS
8.46	14.8	969
6.98	14.6	1212
6.81	14.6	1232
6.77	14.6	1233

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Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02, 13
SITE LOCATION South Point, Ohio
WELL NO. SPMW-03 REPLICATE NO. — DATE 4-17-00
WEATHER 70°F, raining TIME BEGAN 14:30 TIME COMPLETED 15:40

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top of PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 78.0
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 45.03
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 33.0
CALCULATED 16 Actual 17
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 5.3
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR none APPEARANCE slightly muddy TEMPERATURE 13.5 °F (°C)
OTHER (SPECIFIC ION: OVA: HNU: ETC.)
CONDUCTIVITY - UMHOS/CM 491 pH 6.92
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS Delayed by thunderstorm
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	pH	Temp °C	Cond uS
	7.32	15.4	459
	7.14	14.0	475
	7.00	13.7	487
	6.92	13.5	491

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Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. GW-04 REPLICATE NO. — DATE 4-17-00
WEATHER Raining, 70°F Time BEGAN 17:45 Time COMPLETED 18:50

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP)
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP ~~49.~~ 81.2
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 49.46
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 31.7
CALCULATED 15.2 Actual 16
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 5.1
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color ODOR APPEARANCE TEMPERATURE °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM pH
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS Took duplicate meas/level
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Temp °C	Cond uS
7.32	15.0	325
6.13	14.3	417
6.44	14.0	422
6.43	13.8	410
6.44	13.7	428

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Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02, 13
SITE LOCATION South Point, Ohio
WELL NO. MW-05 REPLICATE NO. — DATE 4-19-00
WEATHER d-izzle, 60°F Time BEGAN 11:40 Time COMPLETED 12:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP)
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 87.00
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 62.96
DIAMETER OF CASING 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL ~~25.04~~ 24.0
CALCULATED 12.5 Actual 13
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 3.8 ~~12.5~~
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR none APPEARANCE muddy TEMPERATURE 12.7 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM 410 PH 6.93
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Temp °C	Cond us
5.91	12.4	381
6.27	12.6	408
6.65	12.6	398
6.82	12.7	404
6.93	12.7	410

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Water Sampling Log

PROJECT/NO. South Point RO/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SP.MW-06 REPLICATE NO. — DATE 4-17-00
WEATHER Thunderstorm 65°F TIME BEGAN 15:50 TIME COMPLETED 17:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 102
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 71.38
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 30.6
CALCULATED 14.7 Actual 15
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 4.9
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE sl. cloudy TEMPERATURE 13.6 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM 1071 pH 7.04
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS Delayed by thunderstorm
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	°C	cond us
5.90	14.5	1290
6.86	13.5	1326
6.99	13.5	1221
7.02	13.6	1043
7.04	13.1	1071

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Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02, 13
SITE LOCATION South Point, Ohio
WELL NO. SP-MW-07 REPLICATE NO. SP-MW-07A DATE 4-18-00
WEATHER Raining, 55°F Time BEGAN 7:50 Time COMPLETED 9:15

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 72.00
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 44.82
DIAMETER OF CASING 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 27.2
CALCULATED 13.6 Actual 14
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 4.3
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color pale brn ODOR none APPEARANCE nearly clear TEMPERATURE °F/°C
OTHER (SPECIFIC ION: OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM PH
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Temp °C	Cond µS
6.01	12.2	1391
6.54	14.0	1337
6.65	14.3	1380
6.67	14.4	1416

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Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. MW-08 REPLICATE NO. — DATE 4-18-00
WEATHER cloudy, 50°F Time BEGAN 14:10 Time COMPLETED 14:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE _____ MP ELEVATION _____
TOTAL SOUNDED DEPTH OF WELL BELOW MP 67.00 WATER-LEVEL ELEVATION _____
DEPTH TO WATER BELOW MP 43.36 DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 23.64 CALCULATED 12.5 Actual 13
GALLONS PER FOOT .16 Sampling Pump Intake Setting
GALLONS IN WELL 3.8 (FEET BELOW LAND SURFACE) _____
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color brn-orange ODOR none APPEARANCE sl. muddy TEMPERATURE 13.5 °F/(°C)
OTHER (SPECIFIC ION; OVA; HNU; ETC.) _____
CONDUCTIVITY - UMHOS/CM 609 pH 6.30
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS _____
SAMPLING PERSONNEL M. Schmidt, M Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	pH	Temp °C	cond uS
	6.43	13.3	646
	6.36	13.4	636
	6.36	13.4	629
	6.35	13.4	607
	6.30	13.5	609

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Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02, 13
SITE LOCATION South Point, Ohio
WELL NO. MW-09 REPLICATE NO. — DATE 4-18-00
WEATHER Cloudy Time BEGAN 11:00 Time COMPLETED 11:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 62.00
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 39.74
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 22.26
CALCULATED 11.0 Actual 12
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 3.6
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color orange-brn ODOR none APPEARANCE V. cloudy TEMPERATURE 12.1 °F/°C
OTHER (SPECIFIC ION: OVA: HNU: ETC.)
CONDUCTIVITY - UMHOS/CM 1037 pH 4.27
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Temp °C	Cond uS
4.38	12.2	1203
4.37	12.2	1154
4.26	12.1	1040
4.27	12.1	1037

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Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. MW-~~08~~/10 REPLICATE NO. — DATE 4-18-00
WEATHER cloudy, 60°F Time BEGAN 14:45 Time COMPLETED 15:10

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE _____ MP ELEVATION _____
TOTAL SOUNDED DEPTH OF WELL BELOW MP 92.00 WATER-LEVEL ELEVATION _____
DEPTH TO WATER BELOW MP 63.41 DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 29.00 CALCULATED 14.5 Actual 15
GALLONS PER FOOT .16 Sampling Pump Intake Setting
GALLONS IN WELL 4.6 (FEET BELOW LAND SURFACE) _____
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE 12.5 °F (°C)
OTHER (SPECIFIC ION; OVA; HNU; ETC.) _____
CONDUCTIVITY - UMHOS/CM 395 pH 6.27
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS _____
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	pH	Temp °C	Cond uS
	6.44	12.7	330
	6.07	12.6	416
	6.09	12.6	400
	6.22	12.6	406
	6.27	12.5	395

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Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SP15-23 REPLICATE NO. — DATE 4-18-00
WEATHER 60°F Time BEGAN 12:30 Time COMPLETED 12:35

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) —
HEIGHT OF MP ABOVE/BELOW LAND SURFACE — MP ELEVATION —
TOTAL SOUNDED DEPTH OF WELL BELOW MP 63.9 WATER-LEVEL ELEVATION —
DEPTH TO WATER BELOW MP — DIAMETER OF CASING —
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL — CALCULATED — Actual —
GALLONS PER FOOT — Sampling Pump Intake Setting
GALLONS IN WELL — (FEET ~~BELOW LAND SURFACE~~)
EVACUATION METHOD ~~disposable bailer~~/ pumping well

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE 13.8 °F/°C
OTHER (SPECIFIC ION: OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM 838 PH 6.87
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS Took MS/MSD 47675300 elapsed gallons 12:34
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

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Water Sampling Log

PROJECT/NO. South Point RI/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SP 15-24 REPLICATE NO. SP15-24 A DATE 4-18-00
WEATHER cloudy, 60°F Time BEGAN 16:55 Time COMPLETED 17:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) –
HEIGHT OF MP ABOVE/BELOW LAND SURFACE – MP ELEVATION –
TOTAL SOUNDED DEPTH OF WELL BELOW MP – WATER-LEVEL ELEVATION –
DEPTH TO WATER BELOW MP – DIAMETER OF CASING –
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL – CALCULATED – Actual –
GALLONS PER FOOT – Sampling Pump Intake Setting
GALLONS IN WELL – (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE 14.2 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM 1134 pH 6.82
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS could not get water level
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

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Water Sampling Log

PROJECT/NO. South Point RD/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SP-B-26 REPLICATE NO. — DATE 4-18-00
WEATHER cloudy, 55°F TIME BEGAN 15:20 TIME COMPLETED 16:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE _____ MP ELEVATION _____
TOTAL SOUNDED DEPTH OF WELL BELOW MP 63.94 WATER-LEVEL ELEVATION _____
DEPTH TO WATER BELOW MP 34.87 DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 29.07 CALCULATED 14.5 Actual 15.0
GALLONS PER FOOT .16 Sampling Pump Intake Setting
GALLONS IN WELL 29.0 (FEET BELOW LAND SURFACE) _____
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE _____ °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) _____
CONDUCTIVITY - UMHOS/CM _____ PH _____
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS _____
SAMPLING PERSONNEL M. Schmidt

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	T °C	Cond uS
6.27	13.5	314
6.26	13.5	553
6.68	13.5	729
6.79	13.5	763
6.78	13.5	764

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Water Sampling Log

PROJECT/NO. South Point RI/RA ALL, 02.13
SITE LOCATION South Point, Ohio
WELL NO. SPOB-33 REPLICATE NO. — DATE 4-18-00
WEATHER Raining, 60°F TIME BEGAN 10:00 TIME COMPLETED 10:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE
MP ELEVATION
TOTAL SOUNDED DEPTH OF WELL BELOW MP 106.10
WATER-LEVEL ELEVATION
DEPTH TO WATER BELOW MP 74.18
DIAMETER OF CASING 2 in
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL 31.9
CALCULATED 16 Actual 16
GALLONS PER FOOT .16
Sampling Pump Intake Setting
GALLONS IN WELL 4.6
(FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer/pumping well

SAMPLING DATA/FIELD PARAMETERS

Color none ODOR none APPEARANCE clear TEMPERATURE 13.4 °F/°C
OTHER (SPECIFIC ION: OVA; HNU: ETC.)
CONDUCTIVITY - UMHOS/CM 782 pH 6.91
SAMPLING METHOD AND MATERIAL disposable bailer/pumping well groundwater

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total metals	1 L poly	HNO_3
Ammonia/Nitrate-Nitrite	1 L poly	H_2SO_4

REMARKS
SAMPLING PERSONNEL M. Schmidt, G. Lawrence

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	pH	Temp °C	Cond uS
	7.05	12.3	430
	5.84	13.3	447
	6.47	13.3	739
	6.82	13.4	778
	6.91	13.4	782

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPMW-01 REPLICATE NO. — DATE 11-01-00
WEATHER Clear, Sunny Time BEGAN 2:00 (14:00) Time COMPLETED 2:30 (14:30)

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 80.5 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 40.0 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 39.5 CALCULATED 19.8 Actual 20
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 6.7 (20) (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color light brown ODOR NA APPEARANCE turbid TEMPERATURE 16.0 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY - UMHOS/CM PH
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS ~~pH / conductivity meter not working~~ mts
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Temp	pH	Cond
16.0	6.07	332
14.2	6.41	393
13.7	6.51	360
13.5	6.46	335
13.3	6.47	343

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPAW-02 REPLICATE NO. — DATE 11-1-00
WEATHER 60°F, clear Time BEGAN 11-56 Time COMPLETED ~~12-10-00~~ 12:10 MS

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 84.5 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 49.1 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 34.4 CALCULATED 17.2 Actual 18
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 6.0 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR — APPEARANCE clear TEMPERATURE 14.5 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY - UMHOS/CM 739 pH 6.13
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS —
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼"= 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½"= 0.09	2-½"= 0.26	3-½"= 0.50	6" = 1.47

pH	Temp °C	Cond
5.71	15.3	769 us
5.64	14.7	735
5.99	14.4	740
6.05	14.4	769
6.13	14.5	739

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Water Sampling Log

PROJECT/NO. South Point RDIRA
SITE LOCATION South Point, OH
WELL NO. SP MW-03 REPLICATE NO. – DATE 11-1-00
WEATHER Cloudy, 60°F Time BEGAN 14:50 Time COMPLETED 15:15

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 78.0 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 45.6 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 32.4 CALCULATED 16.2 Actual 17.0
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 5.4 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR – APPEARANCE cloudy TEMPERATURE – °F/°C
OTHER (SPECIFIC ION: OVA; HNU; ETC.) –
CONDUCTIVITY – UMHOS/CM – PH –
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS pH/conductivity meter quit working
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPMW-04 REPLICATE NO. — DATE 11-01-00
WEATHER Clear, Sunny Time BEGAN 4:20 (16:20) Time COMPLETED 4:50 (16:50)

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 81.2 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 50.6 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 30.6 CALCULATED 15.3 Actual 16
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 5 (15) (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE — °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) /
CONDUCTIVITY - UMHOS/CM / PH /
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS ph/conductivity meter not working
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

ph/Temp/Cond. meter inoperative

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. MW-05 REPLICATE NO. — DATE 11-1-00
WEATHER Clear, 40°F Time BEGAN 8:00 Time COMPLETED 8:40

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) ~~45.49~~ MP ELEVATION (ft) 83.91
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 87.0 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 63.4 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 23.6 CALCULATED 11.8 Actual 12
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 3.9 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color cl. brown ODOR — APPEARANCE cloudy-clear TEMPERATURE 12.3 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY (UMHOS/CM) 391 pH 7.51
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS —
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Cond	Temp
6.16	384	10.0 °C
7.39	387	12.2
7.46	392	12.2
7.51	391	12.5
7.51	391	12.3

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP MW-07 REPLICATE NO. SP MW-07A DATE 11-01-00
WEATHER Clear, Sunny Time BEGAN 10:55 Time COMPLETED 11:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 72 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 45 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 27 CALCULATED 13.5 Actual 14
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 4.7 (14) (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE 15.4 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY - UMHOS/CM 1428 PH 7.04
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Time	Temp	pH	cond	vol
11:00	15.6	6.91	1297	0
	15.7	—	1307	
	15.3	7.04	1430	
	15.3	7.06	1442	
	15.4	7.04	1428	

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Water Sampling Log

PROJECT/NO South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP MW-08 REPLICATE NO. — DATE 11-1-00
WEATHER clear, 50°F Time BEGAN 10:05 Time COMPLETED 10:30

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 72 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 45 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 27 CALCULATED 13.5 Actual 14
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 3.5 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color pale brn ODOR — APPEARANCE sl. cloudy TEMPERATURE 13.8 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.)
CONDUCTIVITY - UMHOS/CM 813 PH 6.47
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Cond µS	Temp °C
6.48	779	15.0
6.53	755	14.1
6.54	826	14.0
6.53	817	13.9
6.47	813	13.8

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPMW-09 REPLICATE NO. — DATE 10-31-00
WEATHER Clear 50°F Time BEGAN 17:20 Time COMPLETED 17:50

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 62.00 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 43.40 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 18.60 CALCULATED 9.3 Actual 10
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 3.3 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color sl. brown ODOR — APPEARANCE clear, sl cloudy TEMPERATURE 12.1 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY - UMHOS/CM 5.42 PH 4.90
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS —
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

pH	Temp	Cond
4.93	13.8	449
5.03	12.7	555
5.00	12.4	539
4.92	12.2	545
4.90	12.1	5.42

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. MW-10 REPLICATE NO. - DATE 11-1-00
WEATHER Clear, Sunny TIME BEGAN 09:10 TIME COMPLETED 10:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 92.0 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 63.94 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 28 CALCULATED 44.8 Actual 45.0
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL ~~44.8~~ ~~45~~ 14 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

~~168~~
~~28~~
~~44.8~~

28
.16
168
28
4.48

SAMPLING DATA/FIELD PARAMETERS

Color tan ODOR — APPEARANCE pale tan TEMPERATURE 13.3 °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY UMHOS/CM 312 PH 13.0
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia, Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS —
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Time	Temp	pH	Cond	Vol
9:20	12.1	6.67	324	0
9:30	12.8	6.26	330	3.0
9:35	13.4	6.32	340	6.0
9:40	13.2	6.38	342	9.0
9:45	13.3	6.41	312	13.0

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Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP MW-11 REPLICATE NO. — DATE 11-1-00
WEATHER clear 50°F TIME BEGAN 15:10 TIME COMPLETED 18:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 64.7 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 50.5 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 14.2 CALCULATED 7.1 Actual 8
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 4.8 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR — APPEARANCE muddy TEMPERATURE — °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY - UMHOS/CM — PH —
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS pH / cond meter not working
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPMW-012 REPLICATE NO. — DATE 11-02-00
WEATHER Clear, Sunny TIME BEGAN 08:30 TIME COMPLETED 09:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 65.0 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 49.9 DIAMETER OF CASING (in) 2.0
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 15.1 CALCULATED 7.6 Actual 8
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 2.5 (7.5) (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR none APPEARANCE turbid TEMPERATURE NA °F (°C)
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY (UMHOS) CM — PH —
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Temp/pH/Cond meter not functioning

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPMW-213 REPLICATE NO. — DATE 11-02-00
WEATHER Clear, Sunny Time BEGAN 09:10 Time COMPLETED 09:50

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 71.2 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 49.6 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 21.6 CALCULATED 10.8 Actual 11
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 3.7 (11) (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR none APPEARANCE turbid TEMPERATURE NA °F/°C
OTHER (SPECIFIC ION: OVA: HNU: ETC.) —
CONDUCTIVITY UMHOS/CM — pH —
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS pH/cond meter not working
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP15-23 REPLICATE NO. — DATE 11-02-00
WEATHER Clear, Sunny Time BEGAN 10:05 Time COMPLETED 10:10
MS/MSD

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) DIAMETER OF CASING (in) —
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) — CALCULATED — Actual —
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL — (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer open flow valve, 280 gpm

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE NA °F/°C
OTHER (SPECIFIC ION: OVA: HNU: ETC.) —
CONDUCTIVITY UMHOS/CM — PH —
SAMPLING METHOD AND MATERIAL ~~disposable bailer~~ direct flow into sample container

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS Purged well 30 minutes before sampling. pH/conductor not working.
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP15-24 REPLICATE NO. SP15-24A DATE 11-02-00
WEATHER Clear, Sunny Time BEGAN 9:53 Time COMPLETED 10:00

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) – WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) – DIAMETER OF CASING (in)
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) – CALCULATED – Actual –
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL – (FEET BELOW LAND SURFACE) –
EVACUATION METHOD ~~disposable bailer~~ open flow valve, 240 gpm for ½ hour

SAMPLING DATA/FIELD PARAMETERS

Color clear ODOR none APPEARANCE clear TEMPERATURE NA °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) NA
CONDUCTIVITY UMHOS/CM NA PH –
SAMPLING METHOD AND MATERIAL ~~disposable bailer~~ direct flow into sample container

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS Purged well 30 minutes before sampling.
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Temp/pH/Cond Meter inoperative

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SPOB-12R REPLICATE NO. — DATE 11-3-00
WEATHER cloudy, 70°F Time BEGAN 10:55 Time COMPLETED 11:40

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 82.1 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 49.0 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 33.1 CALCULATED 16.6 Actual 17
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 5.6 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color brown ODOR — APPEARANCE Muddy TEMPERATURE — °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY µMHOS/CM — PH —
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS pH/conductivity meter not working
SAMPLING PERSONNEL M Schmidt, K Yates

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Cox-Colvin & Associates, Inc.
Environmental Services

Water Sampling Log

PROJECT/NO. South Point RD/RA
SITE LOCATION South Point, OH
WELL NO. SP OB-12 R REPLICATE NO. — DATE 11-03-00
WEATHER cloudy, 70°F Time BEGAN 13:00 Time COMPLETED 13:40

EVACUATION DATA

DESCRIPTION OF MEASURING POINT (MP) Top PVC
HEIGHT OF MP ABOVE/BELOW LAND SURFACE (ft) MP ELEVATION (ft)
TOTAL SOUNDED DEPTH OF WELL BELOW MP (ft) 88.7 WATER-LEVEL ELEVATION (ft)
DEPTH TO WATER BELOW MP (ft) 51.5 DIAMETER OF CASING (in) 2
GALLONS EVACUATED PRIOR TO SAMPLING
WATER COLUMN IN WELL (ft) 37.2 CALCULATED 18.6 Actual 19
GALLONS PER FOOT 0.16 Sampling Pump Intake Setting
GALLONS IN WELL 6.2 (FEET BELOW LAND SURFACE)
EVACUATION METHOD disposable bailer

SAMPLING DATA/FIELD PARAMETERS

Color black-brn ODOR sulfurous APPEARANCE cloudy TEMPERATURE — °F/°C
OTHER (SPECIFIC ION; OVA; HNU; ETC.) —
CONDUCTIVITY — UMHOS/CM — PH —
SAMPLING METHOD AND MATERIAL disposable bailer

CONTAINER DESCRIPTION

CONSTITUENTS SAMPLED	SAMPLE CONTAINER	PRESERVATIVE
Total As, Be, Cd, Cu, Mn, Ni	1 Liter Plastic	HNO_3
Ammonia; Nitrate/Nitrite	1 Liter Plastic	H_2SO_4

REMARKS pH/conductivity meter, not working
SAMPLING PERSONNEL M Schmidt, K Valek

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

Appendix E

Analytical Data Sheets

SPT-01-09-01-5
Lot # A1D200199 Sample :
SPIS-23,SPIS-24,SPIS-24A,SPMW-01,SPMW-02,
SPMW-03,SPMW-04,SPMW-05,SPMW-06,SPMW-07,SPMW-07A,SPMW-
, SPMW-09,SPMW-10, SPOB-26,SPOB-33. Taken on 04/18/00
May 10, 2000 Quanterra Inc.

Quanterra

Quanterra
4101 Shuffel Drive, NW
North Canton, Ohio 44720-6961

330 497-9396 Telephone
330 497-0772 Fax
www.quanterra.com

RECE

Ent. 5-15-00 LAC

Val dated
5-23-00

Ent Val Codes
7-11-2000

ANALYTICAL REPORT

SOUTH POINT RD/RA

Lot #: A0D200199

Mort Schmidt

Cox-Colvin & Associates, Inc.

SEVERN TRENT LABORATORIES, INC.

Kenneth J. Kuzior
Project Manager

May 10, 2000

SAMPLE SUMMARY

A0D200199

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DC7N1	001	SPIS-23	04/18/00	12:35
DC7NK	002	SPIS-24	04/18/00	17:00
DC7NP	003	SPIS-24A	04/18/00	17:00
DC7NR	004	SPMW-01	04/17/00	11:47
DC7NV	005	SPMW-02	04/17/00	13:15
DC7NX	006	SPMW-03	04/17/00	15:40
DC7P0	007	SPMW-04	04/17/00	18:50
DC7P4	008	SPMW-05	04/18/00	12:00
DC7P6	009	SPMW-06	04/17/00	17:30
DC7P8	010	SPMW-07	04/18/00	09:15
DC7PG	011	SPMW-07A	04/18/00	09:15
DC7PK	012	SPMW-08	04/18/00	14:30
DC7PP	013	SPMW-09	04/18/00	11:30
DC7Q1	014	SPMW-10	04/18/00	15:10
DC7Q4	015	SPOB-26	04/18/00	16:30
DC7QC	016	SPOB-33	04/18/00	10:30

NOTE(S):

The analytical results of the samples listed above are presented on the following pages.

- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-23

TOTAL Metals

Lot-Sample #...: A0D200199-001 Matrix.....: WG
Date Sampled...: 04/18/00 12:35 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7N1107
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7N110A
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7N110E
		Dilution Factor: 1				
Copper	ND UJ 4	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7N110H
		Dilution Factor: 1				
Manganese	**0.23** J 4	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7N110L**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7N110P
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-23

General Chemistry

Lot-Sample #...: A0D200199-001 Work Order #...: DC7N1 Matrix.....: WG
Date Sampled...: 04/18/00 12:35 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.2	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 5					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24

TOTAL Metals

Lot-Sample #...: A0D200199-002 Matrix.....: WG
Date Sampled...: 04/18/00 17:00 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NK102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7NK103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7NK104
		Dilution Factor: 1				
Copper	ND U J4	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7NK105
		Dilution Factor: 1				
Manganese	**0.44** J4	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7NK106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NK107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24

General Chemistry

Lot-Sample #...: A0D200199-002 Work Order #...: DC7NK Matrix.....: WG
Date Sampled...: 04/18/00 17:00 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	15 J4	2.0	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 20					
Nitrogen, as Ammonia	28 J15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24A

TOTAL Metals

Lot-Sample #...: A0D200199-003 **Matrix.....:** WG
Date Sampled...: 04/18/00 17:00 **Date Received..:** 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NP102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7NP103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7NP104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7NP105
		Dilution Factor: 1				
Manganese	**0.44**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7NP106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NP107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24A

General Chemistry

Lot-Sample #...: A0D200199-003 Work Order #...: DC7NP Matrix.....: WG
Date Sampled...: 04/18/00 17:00 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	13 J4	2.0	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 20					
Nitrogen, as Ammonia	18 J15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-01

TOTAL Metals

Lot-Sample #...: A0D200199-004 Matrix.....: WG
Date Sampled...: 04/17/00 11:47 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NR102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7NR103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7NR104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7NR105
		Dilution Factor: 1				
Manganese	0.34	0.015	mg/L	SW846 6010B	04/21-04/24/00	DC7NR106
		Dilution Factor: 1				
Nickel	0.011	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NR107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-01

General Chemistry

Lot-Sample #...: A0D200199-004 Work Order #...: DC7NR Matrix.....: WG
Date Sampled...: 04/17/00 11:47 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.5	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
		Dilution Factor: 5				
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-02

TOTAL Metals

Lot-Sample #....: A0D200199-005 Matrix.....: WG
Date Sampled....: 04/17/00 13:15 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NV102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7NV103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7NV104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7NV105
		Dilution Factor: 1				
Manganese	**1.4**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7NV106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NV107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-02

General Chemistry

Lot-Sample #...: A0D200199-005 Work Order #...: DC7NV Matrix.....: WG
Date Sampled...: 04/17/00 13:15 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	33 J4	10	mg/L	MCAWW 353.2	04/25/00	0117236
		Dilution Factor: 100				
Nitrogen, as Ammonia	13	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-03

TOTAL Metals

Lot-Sample #...: A0D200199-006 Matrix.....: WG
Date Sampled...: 04/17/00 15:40 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NX104
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7NX107
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7NX10A
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7NX10E
		Dilution Factor: 1				
Manganese	**0.28**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7NX10H**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7NX10L
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-03

General Chemistry

Lot-Sample #...: A0D200199-006 Work Order #...: DC7NX Matrix.....: WG
Date Sampled...: 04/17/00 15:40 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	2.9	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
		Dilution Factor: 5				
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-04

TOTAL Metals

Lot-Sample #...: A0D200199-007 **Matrix.....:** WG
Date Sampled...: 04/17/00 18:50 **Date Received..:** 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P0102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7P0103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7P0104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7P0105
		Dilution Factor: 1				
Manganese	**0.11**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7P0106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P0107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-04

General Chemistry

Lot-Sample #...: A0D200199-007 **Work Order #...:** DC7P0 **Matrix.....:** WG
Date Sampled...: 04/17/00 18:50 **Date Received..:** 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.1	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
		Dilution Factor: 5				
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-05

TOTAL Metals

Lot-Sample #...: A0D200199-008 Matrix.....: WG
Date Sampled...: 04/18/00 12:00 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P4102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7P4103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7P4104
		Dilution Factor: 1				
Copper	ND 0.04	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7P4105
		Dilution Factor: 1				
Manganese	**0.40**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7P4106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P4107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-05

General Chemistry

Lot-Sample #...: A0D200199-008 Work Order #...: DC7P4 Matrix.....: WG
Date Sampled...: 04/18/00 12:00 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	1.4	0.1	mg/L	MCAWW 353.2	04/25/00	0117236
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND U,J 15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-06

TOTAL Metals

Lot-Sample #....: A0D200199-009 Matrix.....: WG
Date Sampled....: 04/17/00 17:30 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P6102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7P6103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7P6104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7P6105
		Dilution Factor: 1				
Manganese	**0.25**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7P6106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P6107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-06

General Chemistry

Lot-Sample #...: A0D200199-009 Work Order #...: DC7P6 Matrix.....: WG
Date Sampled...: 04/17/00 17:30 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	4.3	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 5					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC:

Client Sample ID: SPMW-07

TOTAL Metals

Lot-Sample #....: A0D200199-010 Matrix.....: WG
Date Sampled....: 04/18/00 09:15 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P8102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7P8103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7P8104
		Dilution Factor: 1				
Copper	ND 0.004	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7P8105
		Dilution Factor: 1				
Manganese	**0.84** J4	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7P8106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7P8107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07

General Chemistry

Lot-Sample #...: A0D200199-010 Work Order #...: DC7P8 Matrix.....: WG
Date Sampled...: 04/18/00 09:15 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	13 J4	2.0	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 20					
Nitrogen, as Ammonia	16 J15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07A

TOTAL Metals

Lot-Sample #...: A0D200199-011 **Matrix.....:** WG
Date Sampled...: 04/18/00 09:15 **Date Received..:** 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PG102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7PG103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7PG104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7PG105
		Dilution Factor: 1				
Manganese	**1.0**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7PG106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PG107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07A

General Chemistry

Lot-Sample #...: A0D200199-011 Work Order #...: DC7PG Matrix.....: WG
Date Sampled...: 04/18/00 09:15 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	11 J	2.0	mg/L	MCAWW 353.2	04/27/00	0119217
		Dilution Factor: 20				
Nitrogen, as Ammonia	16	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-08

TOTAL Metals

Lot-Sample #....: A0D200199-012 Matrix.....: WG
Date Sampled....: 04/18/00 14:30 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PK102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7PK103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7PK104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7PK105
		Dilution Factor: 1				
Manganese	**0.24**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7PK106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PK107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-08

General Chemistry

Lot-Sample #...: A0D200199-012 Work Order #...: DC7PK Matrix.....: WG
Date Sampled...: 04/18/00 14:30 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.4 J4	0.1	mg/L	MCAWW 353.2	04/25/00	0117236
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND 0.15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-09

TOTAL Metals

Lot-Sample #....: A0D200199-013 Matrix.....: WG
Date Sampled....: 04/18/00 11:30 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PP102
		Dilution Factor: 1				
Cadmium	0.0043	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7PP103
		Dilution Factor: 1				
Beryllium	0.0031	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7PP104
		Dilution Factor: 1				
Copper	2.3 J4	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7PP105
		Dilution Factor: 1				
Manganese	11.8 J4	0.015	mg/L	SW846 6010B	04/21-04/24/00	DC7PP106
		Dilution Factor: 1				
Nickel	0.46	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7PP107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-09

General Chemistry

Lot-Sample #...: A0D200199-013 Work Order #...: DC7PP Matrix.....: WG
Date Sampled...: 04/18/00 11:30 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	16	10	mg/L	MCAWW 353.2	04/25/00	0117236
		Dilution Factor: 100				
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-10

TOTAL Metals

Lot-Sample #...: A0D200199-014 Matrix.....: WG
Date Sampled...: 04/18/00 15:10 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1102
		Dilution Factor: 1				
Cadmium	0.0044	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1104
		Dilution Factor: 1				
Copper	ND UJ4	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1105
		Dilution Factor: 1				
Manganese	6.0 J4	0.015	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1106
		Dilution Factor: 1				
Nickel	0.10	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7Q1107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-10

General Chemistry

Lot-Sample #...: A0D200199-014 Work Order #...: DC7Q1 Matrix.....: WG
Date Sampled...: 04/18/00 15:10 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.0 J4	0.5	mg/L	MCAWW 353.2	04/27/00	0119217
	Dilution Factor: 5					
Nitrogen, as Ammonia	ND U J15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-26

TOTAL Metals

Lot-Sample #...: A0D200199-015 Matrix.....: WG
Date Sampled...: 04/18/00 16:30 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4105
		Dilution Factor: 1				
Manganese	0.37	0.015	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4106
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7Q4107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-26

General Chemistry

Lot-Sample #...: A0D200199-015 Work Order #...: DC7Q4 Matrix.....: WG
Date Sampled...: 04/18/00 16:30 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	0.6 JA	0.1	mg/L	MCAWW 353.2	04/25/00	0117236
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND 0.075	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-33

TOTAL Metals

Lot-Sample #...: A0D200199-016 Matrix.....: WG
Date Sampled...: 04/18/00 10:30 Date Received..: 04/20/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0112105						
Arsenic	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7QC102
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	04/21-04/24/00	DC7QC103
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	04/21-04/24/00	DC7QC104
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	04/21-04/24/00	DC7QC105
		Dilution Factor: 1				
Manganese	**0.66**	**0.015**	**mg/L**	**SW846 6010B**	**04/21-04/24/00**	**DC7QC106**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	04/21-04/24/00	DC7QC107
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-33

General Chemistry

Lot-Sample #...: A0D200199-016 Work Order #...: DC7QC Matrix.....: WG
Date Sampled...: 04/18/00 10:30 Date Received..: 04/20/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	1.2	0.1	mg/L	MCAWW 353.2	04/25/00	0117237
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND U J15	1.0	mg/L	MCAWW 350.2	04/26/00	0117369
	Dilution Factor: 1					

Cox-Colvin & Associates, Inc.
1679 Old Henderson Road
Columbus, Ohio 43220

Phone (614) 442-1970
Fax (614) 442-1971

Chain-of-Custody Record

Analytical Laboratory: Severn Trent

Project: **South Point RD/RA - South Point, OH**

Project Number: **South Point RD/RA**

Sampler(s): **MAS GAL**

Sample ID	Date	Time	Media	Container Type	Preservative	Requested Analysis	Cooler ID
SPIS-23	4/18/00	12:35	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPIS-23	4/18/00	12:35	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPIS-23MS	4/18/00	12:35	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPIS-23MS	4/18/00	12:35	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPIS-23MSD	4/18/00	12:35	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPIS-23MSD	4/18/00	12:35	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPIS-24	4/18/00	17:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPIS-24	4/18/00	17:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPIS-24A	4/18/00	17:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPIS-24A	4/18/00	17:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPMW-01	4/17/00	11:47	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPMW-01	4/17/00	11:47	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPMW-02	4/17/00	13:15	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPMW-02	4/17/00	13:15	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPMW-03	4/17/00	15:40	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPMW-03	4/17/00	15:40	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPMW-04	4/17/00	18:50	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	G17
SPMW-04	4/17/00	18:50	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	G17
SPMW-05	4/18/00	12:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-05	4/18/00	12:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPMW-06	4/17/00	17:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-06	4/17/00	17:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65

STL North Canton

Cox-Colvin & Associates, Inc.
1679 Old Henderson Road
Columbus, Ohio 43220

Phone (614) 442-1970
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Chain-of-Custody Record

Analytical Laboratory: Severn Trent

Project: **South Point RD/RA - South Point, OH**
Project Number: **South Point RD/RA**
Sampler(s): **MAS GAL**

Sample ID	Date	Time	Media	Container Type	Preservative	Requested Analysis	Cooler ID
SPMW-07	4/18/00	9:15	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-07	4/18/00	9:15	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPMW-07A	4/18/00	9:15	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-07A	4/18/00	9:15	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPMW-08	4/18/00	14:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-08	4/18/00	14:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPMW-09	4/18/00	11:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-09	4/18/00	11:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPMW-10	4/18/00	15:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPMW-10	4/18/00	15:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPOB-26	4/18/00	16:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPOB-26	4/18/00	16:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
SPOB-33	4/18/00	10:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	D65
SPOB-33	4/18/00	10:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	D65
TempD65			Aqueous	1 Oz. Poly	Ice	Temperature	D65
TempG17			Aqueous	1 Oz. Poly	Ice	Temperature	G17

Cox-Colvin & Associates, Inc.
1679 Old Henderson Road
Columbus, Ohio 43220

Phone (614) 442-1970
Fax (614) 442-1971

Chain-of-Custody Record

Analytical Laboratory: Severn Trent

Project: **South Point RD/RA - South Point, OH**
Project Number: **South Point RD/RA**
Sampler(s): **MAS GAL**

Sample ID	Date	Time	Media	Container Type	Preservative	Requested Analysis	Cooler ID

Relinquished By: [signature]	Date: 4-19-00	Time: 17:20	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: [signature]	Date: 4/20/00	Time: 950
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Comments: **Sent in two coolers.**

Deliverables: Data Package: **Standard** Turnaround Time: **Normal** Disk Deliverables? **Yes** Number of Copies: **1**

Send Data to: **Mort Schmidt** Shipping Info: Carrier: **FedEX** Waybill: **792578479223** Custody Seal: Cooler Preserv. **Water Ice**

SEVERN TRENT SERVICES

STL North Canton
4101 Shuffel Drive NW
North Canton, OH 44720-6961

Tel: 330 497 9396
Fax: 330 497 0772
www.stl-inc.com

SPT-02-09-01-21
DataAnalytical Laboratory
Sou[illegible] Point RD/RA Data from Severn Trent - A0K060104 - Samples
tak[illegible] November 2000. SPIS, SPMW and SPOB samples.
Severn Trent Laboratories
Severn Trent Laboratories
11/28/2000

ANALYTICAL REPORT

Validated 12-1-00
MPS

SOUTH POINT RD/RA

Lot #: A0K060104

Ent Val Calls
12-28-2000
LAC

Mort Schmidt

Cox-Colvin & Associates, Inc.

SEVERN TRENT LABORATORIES, INC.

Kenneth J. Kuzior
Project Manager

November 28, 2000

SAMPLE SUMMARY

A0K060104

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DPD8L	001	SPIS-23	11/02/00	10:10
DPD8Q	002	SPIS-24	11/02/00	10:00
DPD8R	003	SPIS-24A	11/02/00	10:00
DPD8T	004	SPMW-01	11/01/00	14:30
DPD8V	005	SPMW-02	11/01/00	12:10
DPD8W	006	SPMW-03	11/01/00	15:15
DPD80	007	SPMW-04	11/01/00	16:50
DPD81	008	SPMW-05	11/01/00	08:40
DPD83	009	SPMW-07	11/01/00	11:30
DPD85	010	SPMW-07A	11/01/00	11:30
DPD86	011	SPMW-08	11/01/00	10:30
DPD87	012	SPMW-09	10/31/00	17:50
DPD88	013	SPMW-10	11/01/00	09:10
DPD9A	014	SPMW-11	11/01/00	18:00
DPD9C	015	SPMW-12	11/02/00	09:00
DPD9F	016	SPMW-13	11/02/00	09:50
DPD9G	017	SPOB-12R	11/03/00	13:40
DPD9H	018	SPOB-34	11/03/00	11:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-23

TOTAL Metals

Lot-Sample #...: A0K060104-001 Matrix.....: WG
Date Sampled...: 11/02/00 10:10 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/10/00	DPD8L1AE
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/10/00	DPD8L1AL
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/10/00	DPD8L1AH
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/10/00	DPD8L1AP
		Dilution Factor: 1				
Manganese	0.22	0.015	mg/L	SW846 6010B	11/08-11/10/00	DPD8L1AT
		Dilution Factor: 1				
Nickel	0.014	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8L1AW
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-23

General Chemistry

Lot-Sample #...: A0K060104-001 **Work Order #...:** DPD8L **Matrix.....:** WG
Date Sampled...: 11/02/00 10:10 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**3.8 J 4**	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	0321407
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24

TOTAL Metals

Lot-Sample #...: A0K060104-002 **Matrix.....:** WG
Date Sampled...: 11/02/00 10:00 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8Q1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD8Q1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD8Q1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD8Q1AG
		Dilution Factor: 1				
Manganese	**0.39**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD8Q1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8Q1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24

General Chemistry

Lot-Sample #...: A0K060104-002 Work Order #...: DPD8Q Matrix.....: WG
Date Sampled...: 11/02/00 10:00 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	10 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321407
	Dilution Factor: 10					
Nitrogen, as Ammonia	25	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24A

TOTAL Metals

Lot-Sample #...: A0K060104-003 **Matrix.....:** WG
Date Sampled...: 11/02/00 10:00 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8R1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD8R1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD8R1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD8R1AG
		Dilution Factor: 1				
Manganese	**0.38**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD8R1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8R1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPIS-24A

General Chemistry

Lot-Sample #...: A0K060104-003 Work Order #...: DPD8R Matrix.....: WG
Date Sampled...: 11/02/00 10:00 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	10 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321407
	Dilution Factor: 10					
Nitrogen, as Ammonia	23	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-01

TOTAL Metals

Lot-Sample #...: A0K060104-004 **Matrix.....:** WG
Date Sampled...: 11/01/00 14:30 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8T1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD8T1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD8T1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD8T1AG
		Dilution Factor: 1				
Manganese	**0.23**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD8T1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8T1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-01

General Chemistry

Lot-Sample #...: A0K060104-004 **Work Order #...:** DPD8T **Matrix.....:** WG
Date Sampled...: 11/01/00 14:30 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**2.5** J4	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-02

TOTAL Metals

Lot-Sample #...: A0K060104-005 Matrix.....: WG
Date Sampled...: 11/01/00 12:10 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8V1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD8V1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD8V1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD8V1AG
		Dilution Factor: 1				
Manganese	**3.0**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD8V1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8V1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-02

General Chemistry

Lot-Sample #...: A0K060104-005 Work Order #...: DPD8V Matrix.....: WG
Date Sampled...: 11/01/00 12:10 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	13 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
	Dilution Factor: 10					
Nitrogen, as Ammonia	10	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-03

TOTAL Metals

Lot-Sample #...: A0K060104-006 Matrix.....: WG
Date Sampled...: 11/01/00 15:15 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8W1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD8W1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD8W1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD8W1AG
		Dilution Factor: 1				
Manganese	**0.19**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD8W1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD8W1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-03

General Chemistry

Lot-Sample #...: A0K060104-006 **Work Order #...:** DPD8W **Matrix.....:** WG
Date Sampled...: 11/01/00 15:15 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**3.1** J4	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321409**
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-04

TOTAL Metals

Lot-Sample #...: A0K060104-007 **Matrix.....:** WG
Date Sampled...: 11/01/00 16:50 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD801AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD801AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD801AG
		Dilution Factor: 1				
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD801AD
		Dilution Factor: 1				
Manganese	**0.077**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD801AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD801AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-04

General Chemistry

Lot-Sample #...: A0K060104-007 **Work Order #...:** DPD80 **Matrix.....:** WG
Date Sampled...: 11/01/00 16:50 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.3 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-05

TOTAL Metals

Lot-Sample #...: A0K060104-008 Matrix.....: WG
Date Sampled...: 11/01/00 08:40 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD811AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD811AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD811AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD811AG
		Dilution Factor: 1				
Manganese	**0.32**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD811AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD811AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-05

General Chemistry

Lot-Sample #...: A0K060104-008 **Work Order #...:** DPD81 **Matrix.....:** WG
Date Sampled...: 11/01/00 08:40 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**1.5** J5	**0.1**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07

TOTAL Metals

Lot-Sample #...: A0K060104-009 **Matrix.....:** WG
Date Sampled...: 11/01/00 11:30 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD831AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD831AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD831AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD831AG
		Dilution Factor: 1				
Manganese	**0.84**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD831AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD831AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07

General Chemistry

Lot-Sample #...: A0K060104-009 Work Order #...: DPD83 Matrix.....: WG
Date Sampled...: 11/01/00 11:30 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	15 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
		Dilution Factor: 10				
Nitrogen, as Ammonia	55	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07A

TOTAL Metals

Lot-Sample #...: A0K060104-010 **Matrix.....:** WG
Date Sampled...: 11/01/00 11:30 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD851AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD851AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD851AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD851AG
		Dilution Factor: 1				
Manganese	**0.85**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD851AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD851AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-07A

General Chemistry

Lot-Sample #...: A0K060104-010 Work Order #...: DPD85 Matrix.....: WG
Date Sampled...: 11/01/00 11:30 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	15 J4	1.0	mg/L	MCAWW 353.2	11/21/00	0326386
	Dilution Factor: 10					
Nitrogen, as Ammonia	55	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-08

TOTAL Metals

Lot-Sample #...: A0K060104-011 Matrix.....: WG
Date Sampled...: 11/01/00 10:30 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD861AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD861AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD861AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD861AG
		Dilution Factor: 1				
Manganese	**0.46**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD861AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD861AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-08

General Chemistry

Lot-Sample #...: A0K060104-011 **Work Order #...:** DPD86 **Matrix.....:** WG
Date Sampled...: 11/01/00 10:30 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**0.1** J4	**0.1**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 1					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-09

TOTAL Metals

Lot-Sample #...: A0K060104-012 **Matrix.....:** WG
Date Sampled...: 10/31/00 17:50 **Date Received..:** 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD871AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD871AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD871AE
		Dilution Factor: 1				
Copper	0.066	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD871AG
		Dilution Factor: 1				
Manganese	3.2	0.015	mg/L	SW846 6010B	11/08-11/11/00	DPD871AH
		Dilution Factor: 1				
Nickel	0.020	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD871AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-09

General Chemistry

Lot-Sample #...: A0K060104-012 Work Order #...: DPD87 Matrix.....: WG
Date Sampled...: 10/31/00 17:50 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	15 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
	Dilution Factor: 10					
Nitrogen, as Ammonia	11	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-10

TOTAL Metals

Lot-Sample #...: A0K060104-013 Matrix.....: WG
Date Sampled...: 11/01/00 09:10 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD881AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD881AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD881AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD881AG
		Dilution Factor: 1				
Manganese	0.76	0.015	mg/L	SW846 6010B	11/08-11/11/00	DPD881AH
		Dilution Factor: 1				
Nickel	0.026	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD881AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-10

General Chemistry

Lot-Sample #...: A0K060104-013 **Work Order #...:** DPD88 **Matrix.....:** WG
Date Sampled...: 11/01/00 09:10 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**1.9** J4	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-11

TOTAL Metals

Lot-Sample #...: A0K060104-014 Matrix.....: WG
Date Sampled...: 11/01/00 18:00 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	0.013	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AE
		Dilution Factor: 1				
Copper	0.056	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AG
		Dilution Factor: 1				
Manganese	1.6	0.015	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AH
		Dilution Factor: 1				
Nickel	0.071	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9A1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-11

General Chemistry

Lot-Sample #...: A0K060104-014 Work Order #...: DPD9A Matrix.....: WG
Date Sampled...: 11/01/00 18:00 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	6.2 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-12

TOTAL Metals

Lot-Sample #...: A0K060104-015 Matrix.....: WG
Date Sampled...: 11/02/00 09:00 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	0.016	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AE
		Dilution Factor: 1				
Copper	0.050	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AG
		Dilution Factor: 1				
Manganese	2.4	0.015	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AH
		Dilution Factor: 1				
Nickel	0.070	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9C1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-12

General Chemistry

Lot-Sample #...: A0K060104-015 **Work Order #...:** DPD9C **Matrix.....:** WG
Date Sampled...: 11/02/00 09:00 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**2.9** J4	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-13

TOTAL Metals

Lot-Sample #....: A0K060104-016 Matrix.....: WG
Date Sampled....: 11/02/00 09:50 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AD
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AE
		Dilution Factor: 1				
Copper	0.042	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AG
		Dilution Factor: 1				
Manganese	1.9	0.015	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AH
		Dilution Factor: 1				
Nickel	0.038	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9F1AJ
		Dilution Factor: 1				

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPMW-13

General Chemistry

Lot-Sample #...: A0K060104-016 **Work Order #...:** DPD9F **Matrix.....:** WG
Date Sampled...: 11/02/00 09:50 **Date Received..:** 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	**2.5** J4	**1.0**	**mg/L**	**MCAWW 353.2**	**11/16/00**	**0321408**
	Dilution Factor: 10					
Nitrogen, as Ammonia	ND	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-12R

General Chemistry

Lot-Sample #...: A0K060104-017 Work Order #...: DPD9G Matrix.....: WG
Date Sampled...: 11/03/00 13:40 Date Received..: 11/06/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite	3.5 J4	1.0	mg/L	MCAWW 353.2	11/16/00	0321408
	Dilution Factor: 10					
Nitrogen, as Ammonia	3.0	1.0	mg/L	MCAWW 350.2	11/18/00	0323092
	Dilution Factor: 1					

COX-COLVIN & ASSOCIATES, INC.

Client Sample ID: SPOB-34

TOTAL Metals

Lot-Sample #...: A0K060104-018 Matrix.....: WG
Date Sampled...: 11/03/00 11:40 Date Received..: 11/06/00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0312300						
Arsenic	**0.014**	**0.010**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD9H1AD**
		Dilution Factor: 1				
Beryllium	ND	0.0030	mg/L	SW846 6010B	11/08-11/11/00	DPD9H1AF
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	11/08-11/11/00	DPD9H1AE
		Dilution Factor: 1				
Copper	ND	0.025	mg/L	SW846 6010B	11/08-11/11/00	DPD9H1AG
		Dilution Factor: 1				
Manganese	**0.39**	**0.015**	**mg/L**	**SW846 6010B**	**11/08-11/11/00**	**DPD9H1AH**
		Dilution Factor: 1				
Nickel	ND	0.010	mg/L	SW846 6010B	11/08-11/11/00	DPD9H1AJ
		Dilution Factor: 1				

Cox-Colvin & Associates, Inc.
1679 Old Henderson Road
Columbus, Ohio 43220

Phone (614) 442-1970
Fax (614) 442-1971

Chain-of-Custody Record

Analytical Laboratory: *Severn Trent*

Project: **South Point RD/RA - South Point, OH**
Project Number: **South Point RD/RA**

Sampler(s): **MAS KV**

Sample ID	Date	Time	Media	Container Type	Preservative	Requested Analysis	Cooler ID
SPIS-23	11/2/00	10:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPIS-23	11/2/00	10:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPIS-23MS	11/2/00	10:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPIS-23MS	11/2/00	10:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPIS-23MSD	11/2/00	10:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPIS-23MSD	11/2/00	10:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPIS-24	11/2/00	10:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPIS-24	11/2/00	10:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPIS-24A	11/2/00	10:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPIS-24A	11/2/00	10:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPMW-01	11/1/00	14:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-01	11/1/00	14:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-02	11/1/00	12:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-02	11/1/00	12:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-03	11/1/00	15:15	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-03	11/1/00	15:15	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-04	11/1/00	16:50	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-04	11/1/00	16:50	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-05	11/1/00	8:40	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-05	11/1/00	8:40	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-07	11/1/00	11:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-07	11/1/00	11:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326

Cox-Colvin & Associates, Inc.
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Chain-of-Custody Record

Analytical Laboratory: *Severn Trent*

Project: **South Point RD/RA - South Point, OH**

Project Number: **South Point RD/RA**

Sampler(s): **MAS KV**

Sample ID	Date	Time	Media	Container Type	Preservative	Requested Analysis	Cooler ID
SPMW-07A	11/1/00	11:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-07A	11/1/00	11:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-08	11/1/00	10:30	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-08	11/1/00	10:30	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-09	10/31/00	17:50	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-09	10/31/00	17:50	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-10	11/1/00	9:10	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-10	11/1/00	9:10	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-11	11/1/00	18:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	J326
SPMW-11	11/1/00	18:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	J326
SPMW-12	11/2/00	9:00	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPMW-12	11/2/00	9:00	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
SPMW-13	11/2/00	9:50	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite MAS	~~J326~~ A59
SPMW-13	11/2/00	9:50	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni) MAS	~~J326~~ A59
SPOB-12R	11/3/00	13:40	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	"
SPOB-12R	11/3/00	13:40	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	"
SPOB-34	11/3/00	11:40	Ground Water	1 Liter Plastic	H2SO4	Ammonia and Nitrate/Nitrite	A59
SPOB-34	11/3/00	11:40	Ground Water	1 Liter Plastic	HNO3	Total Metals (As, Be, Cd, Cu, Mn, and Ni)	A59
Temp	11/2/00	8:00	Aqueous	1 Oz. Poly	Ice	Temperature	J326
Temp	11/2/00	8:00	Aqueous	1 Oz. Poly	Ice	Temperature	A59

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Chain-of-Custody Record

Analytical Laboratory: *Severn Trent*

Project: **South Point RD/RA - South Point, OH**

Project Number: **South Point RD/RA**

Sampler(s): **MAS KV**

Sample ID	*Date*	*Time*	*Media*	*Container Type*	*Preservative*	*Requested Analysis*	*Cooler ID*

Relinquished By: [signature]	Date: 11-3-00	Time: 19:00	Received By:		Date:	Time:
Relinquished By	Date:	Time:	Received By: [signature]		Date: 11-6-00	Time: 8:45A
Relinquished By	Date:	Time:	Received By:		Date:	Time

Comments: **See attached PQL Table for reporting limits. Please send sample receipt report. Two shipments - Waybills 7903 9223 7591 and 7903 9224 0040**

Deliverables: Data Package: **Standard** Turnaround Time: **Normal** Disk Deliverables? **Yes** Number of Copies: **1**

Send Data to: **Craig A. Cox** Shipping Info: Carrier: **FedEX** Waybill: **See Comments** Custody Seal: Cooler Preserv. **Water Ice**