## Myers, Lucretia

**From:** Gravatt, Dan
**Sent:** Monday, June 03, 2013 9:39 AM
**To:** Warren, Victoria;'Paul Rosasco';jschu@usgs.gov
**Subject:** West Lake: potential background well information from SLAPS and Latty Avenue sites
**Attachments:** 2010 sampling report GW SW SED well info.pdf

**Categories:** Yellow Category

Victoria, Paul, John, here's what I've been able to find so far about existing wells at the St. Louis FUSRAP sites near the Airport. If we decide to use any of these, access would be through USACE. Sharon Cotner is the local manager who would be the access contact, 314-260-3905.

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Principles and integrity are expensive, but they are among the very few things worth having.

Ground-water sampling was conducted at nine ground-water monitoring wells at the Latty Avenue Properties during CY 2010. First quarter sampling was conducted on March 8 and 12; second quarter sampling was conducted on May 21 and 25; third quarter sampling was conducted from September 13 through 15 and completed on September 17; and fourth quarter sampling was conducted on December 14, 15, and 17.

**Table 4-1. Screened HZs for Ground-Water Monitoring Wells at the Latty Avenue Properties**

| Well ID | Screened HZs |
|---|---|
| HISS-01 | HZ-A |
| HISS-05D* | HZ-C |
| HISS-06* | HZ-A |
| HISS-09 | HZ-A |
| HISS-10 | HZ-A |
| HISS-14 | HZ-A |
| HISS-15 | HZ-A |
| HISS-17S | HZ-A |
| HISS-18S | HZ-A |
| HISS-19S | HZ-A |
| HW21 | HZ-A |
| HW22 | HZ-A |
| HW23 | HZ-C |

*HISS-06 and HISS-05D were damaged during remediation activities conducted at the HISS in early CY 2010 and will be decommissioned in early CY 2011.

## HZ-A Ground Water

Ground-water samples were collected from eight HZ-A wells during CY 2010. Summary tables presenting the analytical data for all analytes are included in Appendix E.

For response-action monitoring, the CY 2010 ground-water data were evaluated to determine if ground-water conditions have significantly degraded. Continued monitoring of HZ-A could be required long term if significantly degraded ground-water conditions are found. Based on the ROD and the EMICY10 (USACE 2010), a significantly degraded ground-water condition requires all of the following:

1) that soil COC concentrations have statistically increased in ground water (relative to the well's historic data and accounting for uncertainty) for more than a 12-month period. Significantly increased concentrations are defined as doubling of an individual COC concentration above the upper confidence limit (UCL) of the mean (based on the historical concentration before RA) for a period of 12 months;
2) that the degraded well is close enough to impact Coldwater Creek; and
3) that a significant degrading of Coldwater Creek surface water is anticipated.

The CY 2010 results were compared to the ROD ground-water guidelines for the soil COCs identified in the ROD (i.e., antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, total U, vanadium, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, and U-238). Table 4-2 lists those soil COCs with concentrations above the ROD ground-water guidelines in HZ-A ground-water samples at the Latty Avenue Properties during CY 2010.

Four inorganic soil COCs were detected at concentrations above the ROD guidelines in HZ-A ground water at the Latty Avenue Properties: arsenic (HW22), molybdenum (HISS-10, HW21,

dominant unit to obtain water in the lower horizon is the sandy, clayey gravel of Unit 4. Unit 4 of HZ-C is used as a surrogate for HZ-E, as water movement within the Mississippian limestone is dependent upon the limestone's joint and solutioned system. In addition, the limestone has exhibited massive characteristics and is very slow to recharge.

### 4.2.1 Evaluation of Ground-Water Monitoring Data at the St. Louis Airport Site and St. Louis Airport Site Vicinity Properties

The purpose of the ground-water monitoring conducted at the SLAPS and SLAPS VPs is specified in the ROD (USACE 2005). Response-action monitoring is currently being conducted in HZ-A and HZ-C to assess the improvement of water quality due to source removals and to document the protection of the limestone aquifer (HZ-E) during the RA.

As noted in Section 4.1.1, the ground-water monitoring data at the SLAPS and SLAPS VPs are evaluated against the requirements for ground-water monitoring identified in the ROD (USACE 2005).

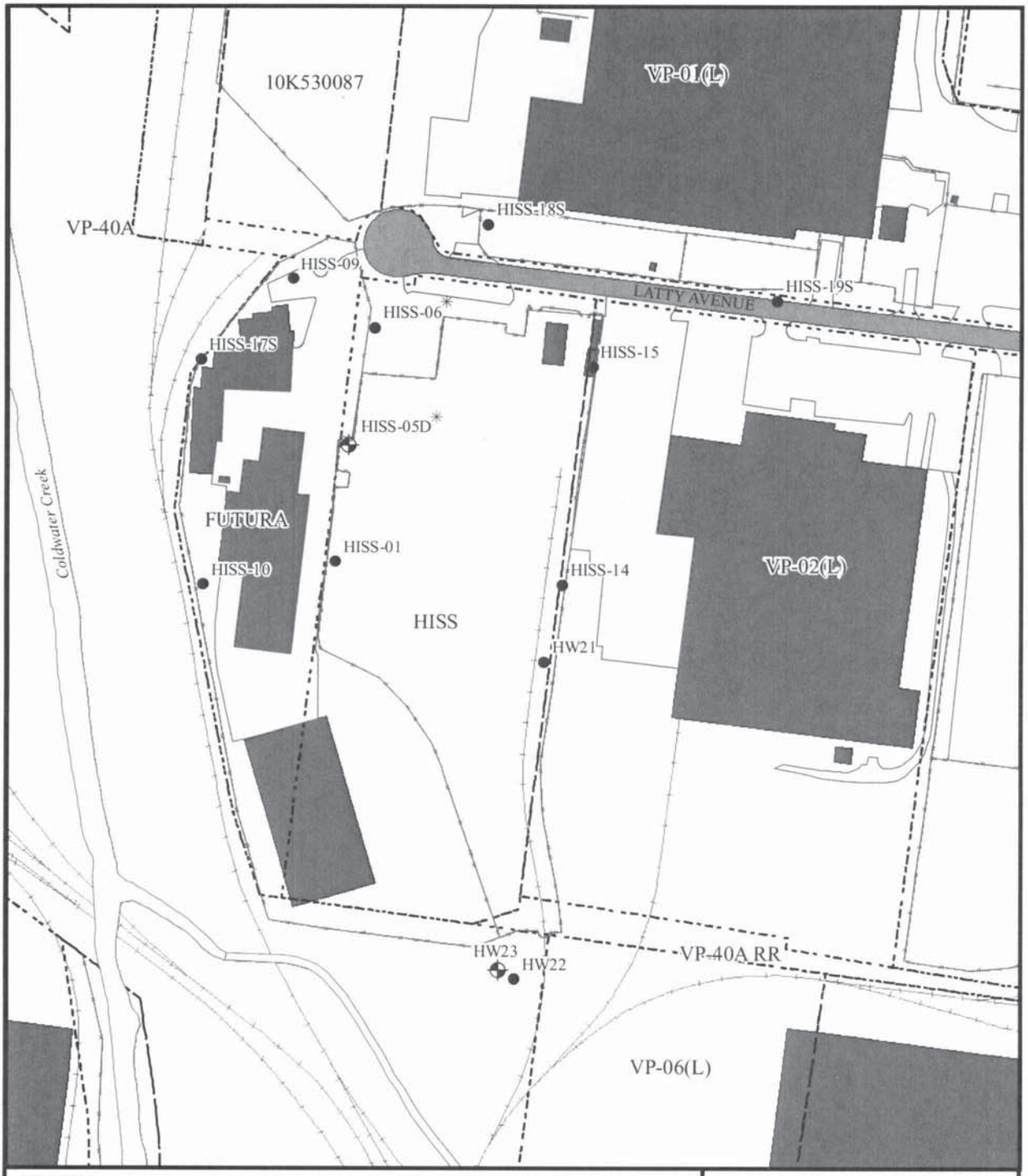
In addition to the above, an evaluation of concentration trends is conducted for the COCs detected above ROD ground-water guidelines in ground water to support assessment of the effectiveness of the RA in the CERCLA five-year reviews.

**Monitoring Well Network at the St. Louis Airport Site and St. Louis Airport Site Vicinity Properties**

The current EMP well network for the SLAPS and SLAPS VPs is shown in Figure 4-11. A summary of the HZ information for the ground-water monitoring wells located at the SLAPS and SLAPS VPs is provided in Table 4-5. HZ-A is considered the upper (or shallow) zone, while HZ-C, HZ-D, and HZ-E have been considered the lower (or deep) zone. This designation of upper and lower zones is separated at Subunit 3M of HZ-B. Fourteen wells are screened exclusively across the shallow zone (HZ-A). Four wells are screened exclusively in the lower zone across HZ-C, HZ-D, and/or HZ-E. The remaining well (PW36) is screened across both HZ-B and HZ-C.

**Table 4-5. Ground-Water Monitoring Well Network at the SLAPS and SLAPS VPs**

| Well ID | Screened HZs | | | |
|---|---|---|---|---|
| | HZ-A | HZ-B | HZ-C | HZ-E |
| B53W01D | | | X | |
| B53W01S | X | | | |
| B53W06S | X | | | |
| B53W07D | | | X | |
| B53W07S | X | | | |
| B53W09S | X | | | |
| B53W13S | X | | | |
| B53W17S | X | | | |
| B53W18S | X | | | |
| B53W19S | X | | | |
| MW31-98 | X | | | |
| MW32-98 | X | | | |




LEGEND:

- Buildings
- Parking Lots
- Road
- Fence
- Railroad
- River/Stream
- Parcel Boundary
- Existing HZ-A Monitoring Well
- Existing HZ-C Monitoring Well
- * HISS-05D and HISS-06 will be decommissioned in early CY 2011. A replacement well for HISS-06 will be installed.

N W E S

MO-East State Plane (NAD 83, Feet)

0 100 200 Feet

Figure 4-2. Existing Monitoring Well Locations at the Latty Avenue Properties

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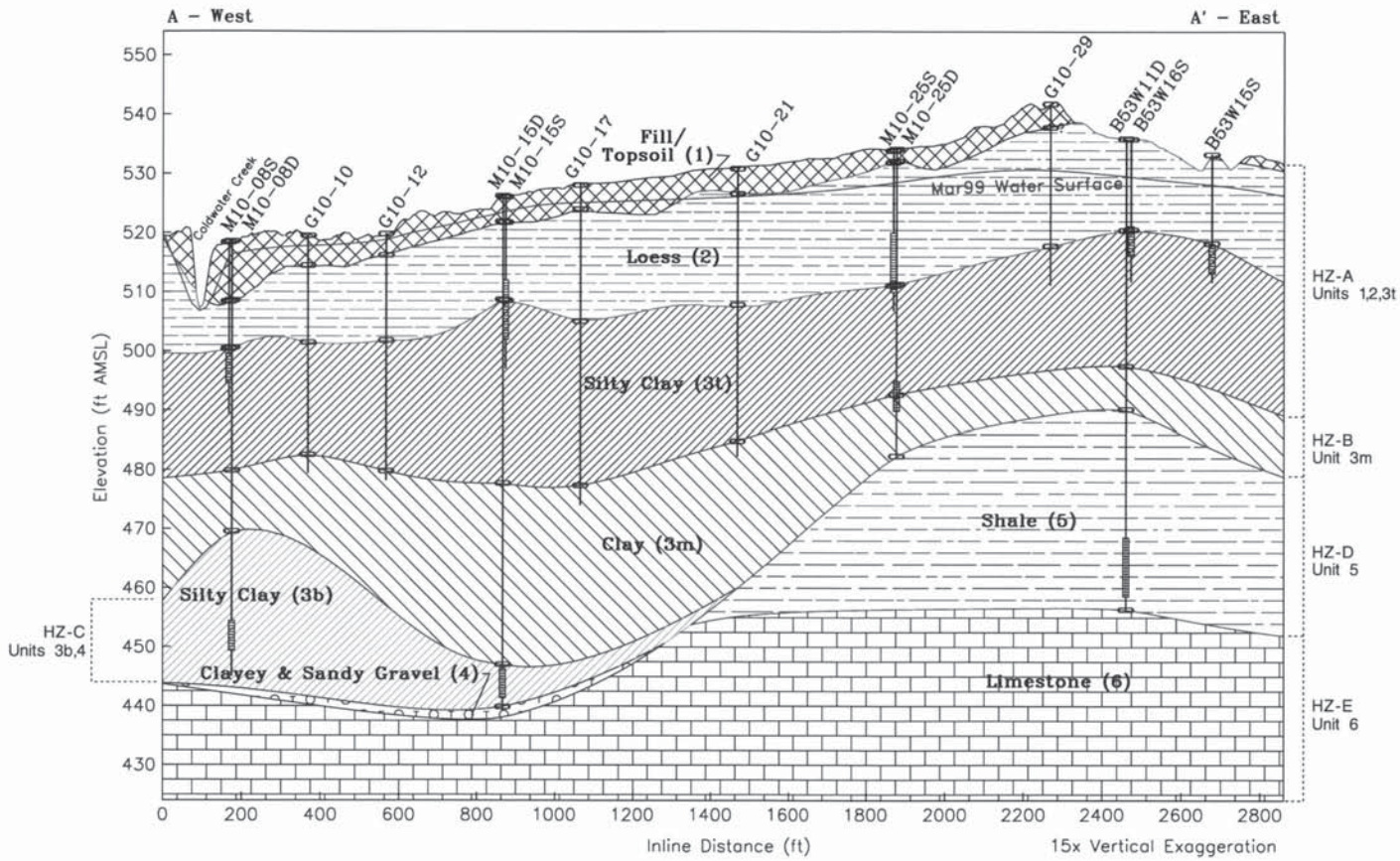
| DRAWN BY: | REV: | DATE: |
|---|---|---|
| KLP | 0 | 6-7-2011 |

U:\GPS\EMDAR\NCO Projects\FY2011\Rev0\Figure 4-2 Existing Monitoring Well Locations at the Latty Avenue Properties.mxd




Notes

Geologic data used in the cross section collected through 2000.

Legend

Borehole pick

Well screen

Cross Section Location Map

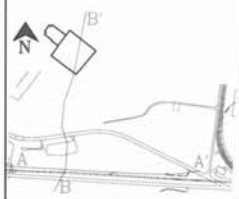



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Figure 4-9. Geologic Cross-Section A-A' at the SLAPS

Drawn By: N. Voorhies

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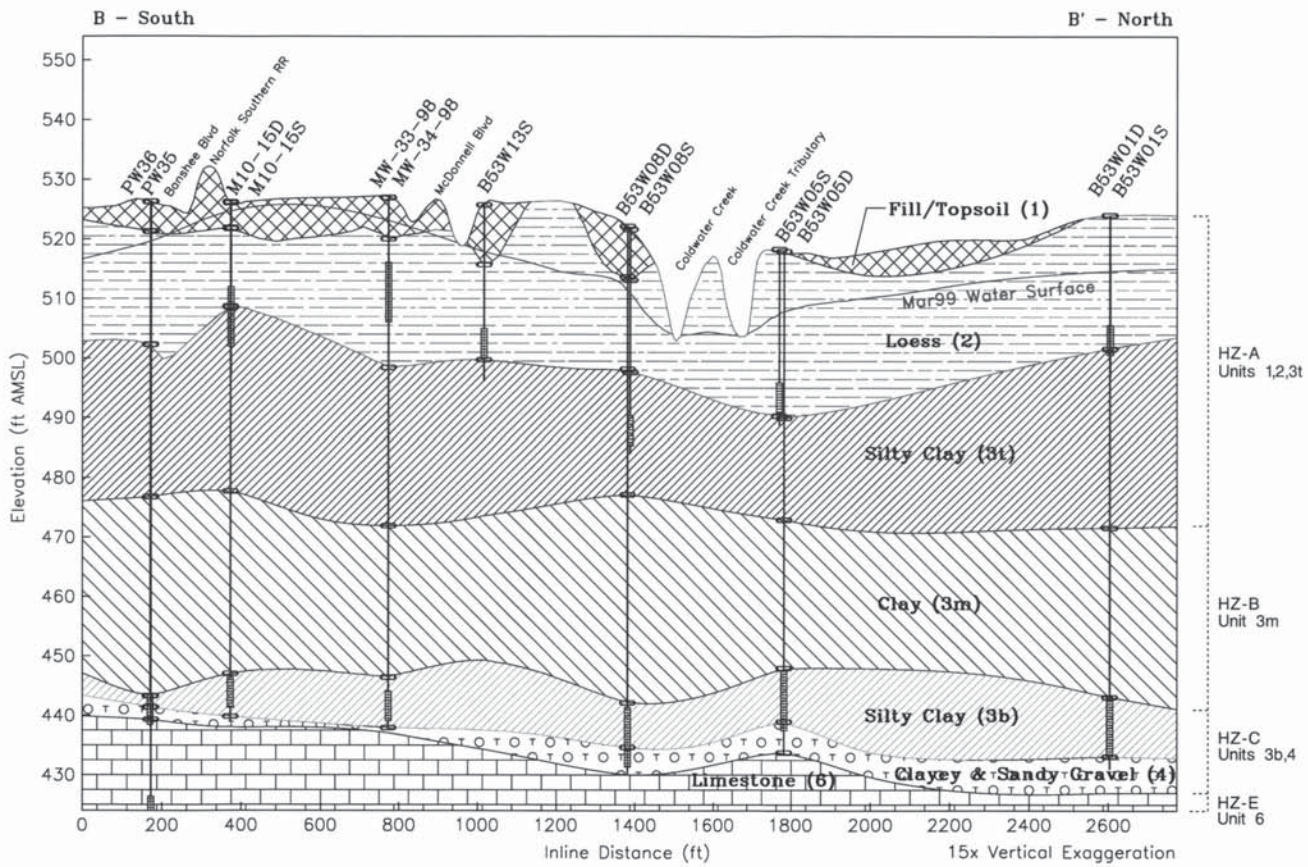
File: SLAPSGlg05ExtendedAAS.sho




Notes

Geologic data used in the cross section collected through 2000.

Legend

Borehole pick

Well screen

Cross Section Location Map

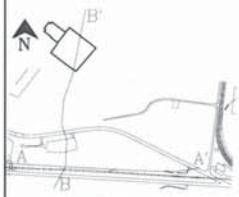



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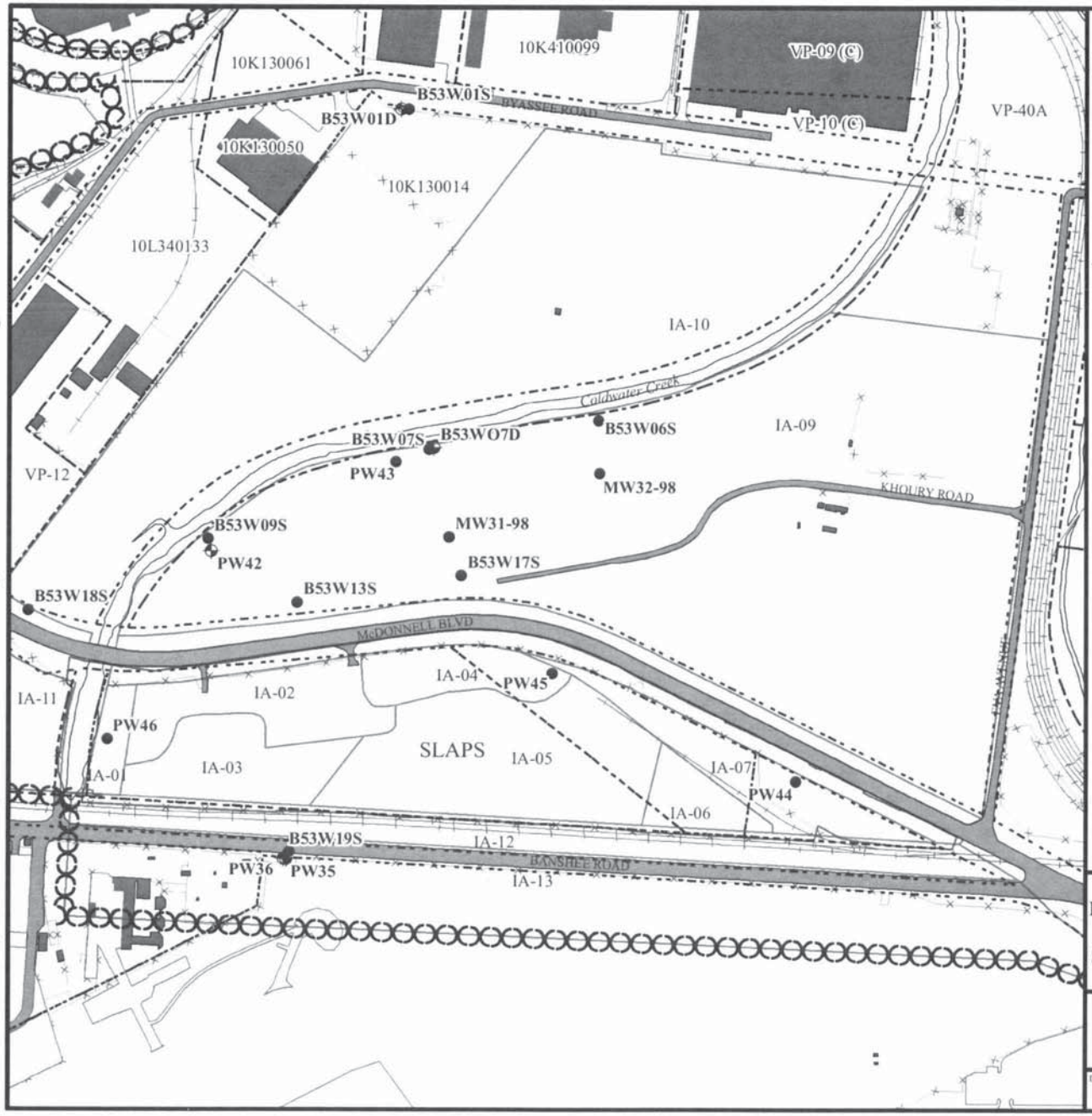
Figure 4-10. Geologic Cross-Section B-B' at the SLAPS and SLAPS VPs

Drawn By: N. Voorhies

Rev. No.- Date: 0 - 08/29/00

File: SLAPSGlg05ExtendedBBS.sho




LEGEND:

- ROD Boundary
- Parcel Boundary
- Buildings
- Parking Lots
- Road
- Railroad
- River/Stream
- Existing HZ-C or HZ-E Monitoring Well
- Existing HZ-A Monitoring Well

N
W E
S

MO-East State Plane
(NAD 83, Feet)

0 200 400 Feet

Figure 4-11. Existing Ground-Water Monitoring Locations at the SLAPS and Surrounding SLAPS VPs

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| DRAWN BY | REV | DATE |
|---|---|---|
| KLP | 0 | 6-1-2011 |

U:\GPS\EMDAR\NCO Projects\FY2011\Rev0\Figure 4-11 Ground-Water Monitoring Locations at the SLAPS and Surrounding SLAPS VPs.mxd