**SITE-SPECIFIC SAMPLING AND ANALYSIS PLAN**
**SANDIES DRY CLEANERS AND LAUNDRY SITE RV**
**GROUNDWATER MONITORING**

## Project Information

| | | |
|---|---|---|
| TDD No.: TO-01-11-08-0020 | TDD Type: Removal Action | Analytical TDD No.: TO-01-11-08-0020 |
| Site Name: Sandies Dry Cleaners and Laundry RV | City/County: Little Chute/ Outagamie | State: WI |
| OTIE Project Mgr.: Andrew Plier | EPA Project Mgr.: Ramon Mendoza, On Scene Coordinator (OSC) | |
| Site Lead: ☒US EPA ☐State ☐PRP_____ ☐Other_____ | | |

## History

**Site Description**:
The former Sandies Dry Cleaner facility (SDC), vacant since 2006, is located at 513 Grand Ave in Little Chute, WI, about 30 minutes south of Green Bay in Outagamie County. SDC is located among a mixture of residential and commercial properties. Past facility operations and practices let to soil contamination and groundwater contamination with dry cleaning related chemicals. Historical investigations conducted by the Wisconsin Department of Natural Resources (WDNR), Wisconsin Department of Health Services (WIDHS), and the United States Environmental Protection Agency (EPA) concluded that the site is contaminated with chemicals common to the dry cleaning process; perchloroethylene/trichloroethylene (PCE/TCE).

**Site Background:**
Dave Linskens, the potential responsible party (PRP) for SDC, hired Terracon Consultants Inc. to conduct a Phase II Investigation. A soil sample collected at one foot below the former dry cleaning machine indicated PCE concentration of 125 parts per million (ppm). A second soil sample collected from three feet below ground surface (bgs) in the alley behind SDC indicated a PCE concentration of 4.5 ppm.

In February, 2011, the WIDHS conducted indoor air sampling at the source site and adjacent interconnected buildings (shared brick walls). WIDHS documented the presence of PCE in the unoccupied apartment above the SDC facility and in all three levels of the adjacent property, known as Weenies Still (a tavern immediately north of SDC). PCE was above the residential (0.6 ppb by volume) and commercial (3.1 ppb by volume) indoor air standards. The PCE levels of the owner-occupied residence above Weenies Still measured ten times higher than the residential indoor air. PCE in indoor air samples collected from the Bakery Outlet (Immediately south of SDC) were above residential standards, but below commercial standards. The WDNR requested EPA assistance to conduct a Removal Assessment and Removal Action at SDC.

In March 2011, the Superfund Technical Assessment and Response Team (START), contractor to the EPA, conducted indoor air sampling by collecting 6 summa canister air samples from SDC and premises located to the north and south of SDC. A 24-hour summa canister air sample was collected from each location. One sample was collected from the unoccupied second floor apartment at Sandies Dry Cleaners (513 Grand Ave); one sample from the first floor of the adjacent Weenies Tavern, (515 Grand Ave); one sample from the occupied second floor apartment above Weenies

Tavern; one sample from the basement of Weenies Tavern near an adjoining wall to the dry cleaners; one sample from the basement of the adjacent Bakers Outlet, (505 Grand Ave); one sample from the occupied second floor apartment south of the Bakers Outlet, above American Family Insurance, (505 Grand Ave). Sample results indicated PCE contamination in all samples except from the apartment above American Family Insurance (505 Grand Ave). PCE results indicated 31ppbv in SDC, 3.6 – 5 ppbv in Weenies Tavern and 0.78 ppbv in the Bakers Outlet.

In April 2011, START collected subsurface soil samples through installation of borings at the site and in the parcel behind the site. Analytical results confirmed an on-site PCE source in the soil of the former dry cleaner machinery room.

In September, 2011, USEPA initiated a removal action. Removal action included excavating and backfilling identified hot spots within the target area. Additionally, subslab ventilation systems were installed in the dry cleaning room at SDC, in the basement of Weenies Tavern, and in the crawl space under SDC to exhaust additional soil gas. After the removal action was completed, the EPA's ERRS contractor installed 3 monitoring wells in the parcel of land behind the site (Figure 1). These wells were installed to evaluate the groundwater quality and monitor the contaminants on a quarterly or on an as needed basis. The ground water monitoring is scheduled to begin in the second week of December, 2011 and may occur on a quarterly basis thereafter.

## Sampling

**Summary:**
This SAP discusses sampling protocols and procedures and the sample results. This SAP also addresses follow-up sampling that would occur periodically based on these sample results. As part of the monitoring requirements, three on-site monitoring wells were sampled in December 2011. The sampling procedures discussed below were used during the December 2011 sampling and will be used for all subsequent sampling at this site. QA/QC samples include trip blank and duplicate samples and will be collected along with regular samples. Appendix A includes a site sample location map and pictures of the respective wells. Appendix B includes State of Wisconsin DNR forms 4400-89 and 4400-113A which detail the well construction.

**Well Development:**
Prior to sampling, all wells were developed according to the WDNR Groundwater Monitoring Well Requirements (NR 141.21). This process included using a surge block and submersible pump to conduct, at minimum, thirty minutes of surging and purging each well. This was followed by continuously pumping until the wells produced sediment free water. OTIE developed the wells in early December 2011 and was able to obtain sediment free water from each well during this procedure. See Table 2 for a complete overview of the well development results.

**Collection and Handling Procedures:**
Each round of monitoring well sampling will include the collection of:

1. Three groundwater samples from the permanent groundwater wells behind SDC
2. One duplicate sample.
3. One trip blank

All groundwater samples were collected in accordance with the EPA Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures and section four of OTIE's SOP (OTIE008F). Prior to sampling, a Heron Dipper-T water level meter was used for checking groundwater depths. A peristaltic pump or

other such pumping equipment was used to purge each monitoring well. A Horiba U-52 or similar water quality meter was used to monitor the water quality parameters for stabilization prior to sample collection.

The following Guidelines/procedures dictate monitoring well sampling:

1. Prepare the sample site
2. Decontaminate all equipment prior to its use in accordance with OTIE's Decontamination Procedures (OTIE011A)
3. Record depth to the water surface and to the bottom of the well using a water level meter
4. Lower dedicated sampling tube to the middle of the screened interval of the well
5. Using a low flow pump, begin pumping water at a rate of 0.1-0.5 L/Min
6. Record water quality readings, at a minimum, once every well volume until the parameters stabilize for three consecutive readings. Stabilization parameters include;
    a. pH: +/- 0.1 pH unit
    b. Temperature: +/- 10%
    c. Specific conductance: +/- 3%
    d. ORP: +/- 10mV
    e. DO: +/- 10%
    f. Turbidity: Target of 10NTU's or less for metal samples and 50 NTU's or less for organic samples
7. Collect, containerize, preserve, and handle the sample in accordance with EPA guidelines and additional procedures suggested by the supplying laboratory for collecting and preserving samples
8. Collect a duplicate water sample from one of the monitoring wells and also prepare a trip blank. These samples will be handled and kept in the same environmental conditions as the other monitoring well samples.
9. Record all findings and take photo documentation of the site

On 12/13/2011 OTIE conducted the initial groundwater sampling for three wells at the SDC site; SDC-MW-1, SDC-MW-2, and SDC-MW-3 (see appendix A). SDC-MW-1 is located approximately 15.5 feet south of SDC and 9.0 feet east of Weenies detached garage. The initial water surface was 5.56 feet below the well cap. The water quality parameters stabilized after 25 minutes. Approximately 2.5 gallons were pumped from this location during the sampling procedure. SDC-MW-2 is located approximately 29.0 feet south of SDC and 30.0 feet east of Weenies detached garage. The initial water surface was 5.64 feet below the well cap. The water quality parameters stabilized after 55 minutes. Approximately 5 gallons were pumped from this location during the sampling procedure. SDC-MW-3 is located approximately 8.30 feet south of the Bakery and 6.80 feet east of the southwest corner of the Bakery. The initial water surface was 5.67 feet below the well cap. The water quality parameters stabilized after 45 minutes. Approximately 4 gallons were pumped from this location during the sampling procedure.

All samples were analyzed for VOC's. Sample bottle requirements, analytical methods, and preservatives are listed in Table 1. Sample results can be found in Table 3. The expected turn-around time for each sample was Standard Turnaround Time.

**Sample Analysis:**

The initial round of sampling was conducted on 12/13/2011. Table 3 displays a summary of the December 2011 sample results. All samples, including one trip blank and one duplicate sample, were

analyzed for VOCs. The bolded numbers in Table 2 indicate results above the reporting limit, hence, are considered accurate by the labs testing procedures. Numbers that are not above the reporting limit (not bolded) are considered estimates by the reporting laboratory. Numbers that are highlighted are considered above the state and/or federal limits.

We can see from table 2 that SDC-MW-1 had no detected contaminants. SDC-MW-2 had trace amounts of acetone, dichloroethene, and trichloroethene, but was slightly above the state and federal limits for tetrachloroethene. SDC-MW-3 had trace amounts of dichloroethene, but was 62 times and almost 4 times above state and federal limits for tetra- and trichloroethene respectively. SDC-MW-3 had a duplicate sample taken that confirmed similar results. Further quarterly sampling is recommended to monitor the target site for contaminant release.

**Table 1**
**Sampling Requirements**
**Sandies Dry Cleaners and Laundry Site RV**

| Matrix[1] | Parameter/Method[2] | Volume and Container[2] | No. of Investigative Samples | No. of Quality Control (QC) Samples[3] | | | | | | Total No. of Samples (Investigative + QC) | Total No. of sample containers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MS | MSD | Field Duplicate or Split | Equipment Blank | Field Blank | Trip Blank | | |
| Water | VOC's/ SW-846: 8015B, 8021B, 8260B | 40 ml Vials/3 | 3 | | | 1 | | | 1 | 4 | 12 |

Notes:

1 Matrix includes water.
2 Refer to Table 2-2 of the START Region 5 QAPP for required sample volumes, containers, preservation techniques and holding times. VOC bottles are pre-preserved with HCL
3 Refer to the Field Quality Control Requirements of the START Region 5 QAPP.

**Table 2**
**Groundwater Monitoring Analytical Results for VOC's**
**Sandies Dry Cleaner & Laundry-RV**
**Little Chute, WI**

| Well ID | Initial Measurements | | | | Original Purge | | |
|---|---|---|---|---|---|---|---|
| | Depth To Water Surface (ft) | Depth To Bottom of Well (ft) | Well Volume (gal) | Water To Be Purged (gal) | Purge Time (Mins) | Number of Cycles | Gallons Retrieved |
| SDC-MW-1 | 4.60 | 19.90 | 2.50 | 7.50 | 120 | 5 | 5 |
| SDC-MW-2 | 5.32 | 19.75 | 2.35 | 7.05 | 120 | 5 | 6 |
| SDC-MW-3 | 5.60 | 19.82 | 2.32 | 6.96 | 120 | 5 | 5 |

**Surge and Purge Cycle**

| Well ID | First Purge | | | | | Second Purge | | | | | Third Purge | | | | | Total Gallons Retrieved |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Recharge Time (Min) | Purge Time (Mins) | Gallons Pumped | Water Clear (Y/N) | Well Dry (Y/N) | Recharge Time (Min) | Second Purge Time (Min) | Gallons Pumped | Water Clear (Y/N) | Well Dry (Y/N) | Recharge Time (Min) | Third Purge Time (Min) | Gallons Pumped | Water Clear (Y/N) | Well Dry (Y/N) | |
| SDC-MW-1 | 90 | 30 | 5 | N | Y | 60 | 10 | 4 | N | Y | 30 | 5 | 1 | Y | Y | 10 |
| SDC-MW-2 | 75 | 45 | 8 | Y | Y | 20 | 5 | 2 | Y | Y | N/A | N/A | N/A | N/A | N/A | 10 |
| SDC-MW-3 | 25 | 40 | 9 | N | Y | 20 | 2 | 1 | Y | Y | N/A | N/A | N/A | N/A | N/A | 10 |

**Note**

| | |
|---|---|
| Well ID | Monitoring well identification number |
| ft | Feet |
| Min | Minutes |
| gal | Gallons |
| N/A | Not applicable |

**Table 3**
**Groundwater Monitoring Analytical Results**
**December 2011**
**Sandies Dry Cleaner & Laundry Site RV**
**Little Chute, WI**

| Analyte | Action Levels ( µg/L) | | Results ( µg/L) | | |
|---|---|---|---|---|---|
| VOCs | EPA (Federal) MCL | WDNR 809 (State) MCL | SDC-MW-1 | SCD-MW-2 | SDC-MW-3 |
| Acetone | *12,000 | *9,000 | 0.0 | 6.9 | 0.0 |
| cis-1,2-Dichloroethene | 70.0 | 70.0 | 0.0 | 3.7 | 4.6 |
| Tetrachloroethene | 5.0 | 5.0 | 0.0 | **8.0** | **310.0** |
| Trichloroethene | 5.0 | 5.0 | 0.0 | 1.4 | **19.0** |

**Notes:**

VOCs — Volatile organic compounds

µg/L - micrograms per liter

SDC-MW - Monitoring Well identification

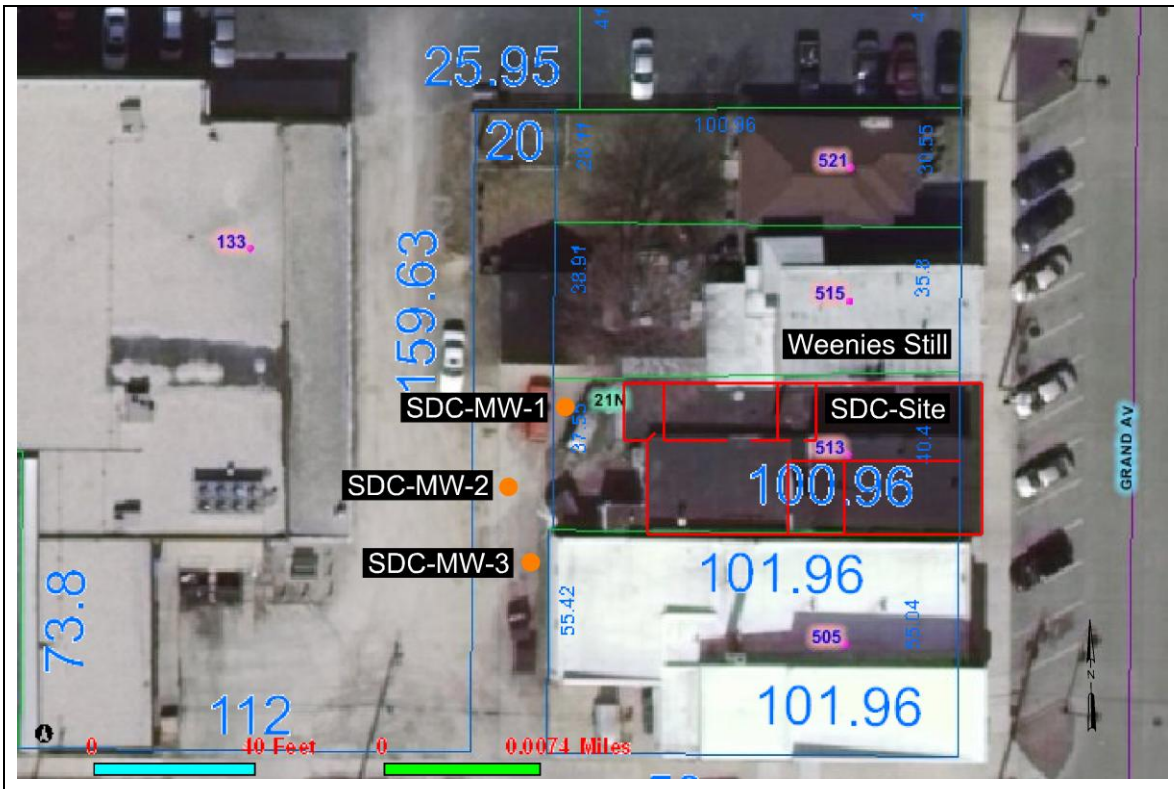
**8.0 -** Bolded highlighted results indicate exceedences of federal and/or state maximum contaminant level (MCL) drinking water standards

* - Acetone has no federal or state listed MCL values. In this table, NR 140 ES for acetone was used as the state standard and the EPA RSL for tap water was used as the federal standard

Samples were analyzed for all VOCs. Table 3 includes the sample results of only detected analytes

Analyses was conducted by Mircobac Laboratories, Merrillville, Indiana under START TDD No: TO-01-11-08-0020 and contract EP-S5-10-10

**APPENDIX A**
**Groundwater Well Location Map and Site Pictures**




**Legend**

- Approximate Groundwater Monitoring Well Locations
- Sandies Dry Cleaner Site (SDC Site)

**North**

**Map Source: City of Little Chute, WI**

**Figure 1**
**Monitoring Well Location Map**

**Sandies Dry Cleaner Site RV**
**Little Chute, Outagamie County, Wisconsin**
**TDD No. TO-01-11-08-0020**

OTIE
Oneida Total Integrated Enterprises

# Sample Location Photos



**APPENDIX B**
**WDNR Monitoring Well Construction Forms**

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☒ USEPA

# MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

| | | |
|---|---|---|
| Facility/Project Name: Sandies DCB L-Lake Chute | Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W. | Well Name: SDC-MW-1 |
| Facility License, Permit or Monitoring No. | Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. 44° 16' 759N" Long. 88° 18' 973W or | Wis. Unique Well No.: VV350 / DNR Well ID No.: ___ |
| Facility ID: ___ | St. Plane ____ ft. N, ____ ft. E. S/C/N | Date Well Installed: 11/16/2011 (m m d d y y y y) |
| Type of Well: Well Code 26 / EW | Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 21, T. 21 N, R. 18E ☒E ☐W | Well Installed By: Name (first, last) and Firm: Chad VanDeYacht, Ground Source |
| Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☒ | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☒ Sidegradient d ☐ Downgradient n ☐ Not Known | Gov. Lot Number: ___ |

A. Protective pipe, top elevation 732.0 ft. MSL

B. Well casing, top elevation 731.5 ft. MSL

C. Land surface elevation 732 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ ___

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ___

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ____ ft. MSL or 1 ft.

F. Fine sand, top ____ ft. MSL or 3 ft.

G. Filter pack, top ____ ft. MSL or 3.5 ft.

H. Screen joint, top ____ ft. MSL or 5 ft.

I. Well bottom ____ ft. MSL or 20 ft.

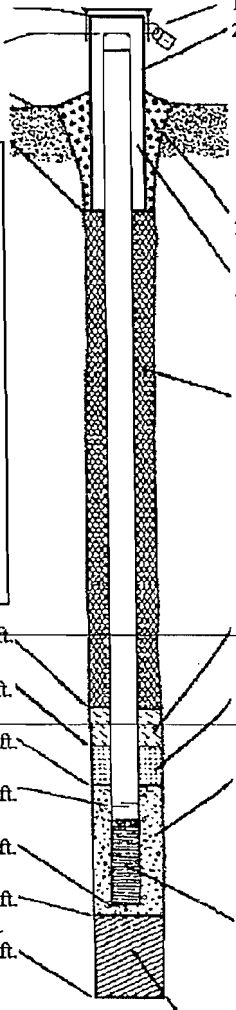
J. Filter pack, bottom ____ ft. MSL or 20.5 ft.

K. Borehole, bottom ____ ft. MSL or 20.5 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.03 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 1 ft.
c. Material: Steel ☒ 04 Other ☐ ___
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ___

3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐ ___

4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐ ___

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☐ 32
c. ___ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger ___
b. Volume added 85 $ft^3$

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger ___
b. Volume added 5 $ft^3$

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ___

10. Screen material: PVC ___
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ ___
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 1.5 ft.

11. Backfill material (below filter pack): None ☒ 14 Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: OTIE - U.S. EPA Contractor

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☑ USEPA

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Sandies DC #1 - 513 Grand Ave Little Chute | Outagamie | SDC-MW-1 |
| **Facility License, Permit or Monitoring Number** | **County Code** | **Wis. Unique Well Number** | **DNR Well ID Number** |
| | | VV350 | |

1. Can this well be purged dry? ☑ Yes ☐ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☐ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☑ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ [illegible] |

3. Time spent developing well 420 ~~435~~ min.

4. Depth of well (from top of well casisng) 19.9 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 2.5 gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added N/A

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 4.60 ft. | 0.00 ft. |
| Date | b. 12/05/2011 (m m d d y y y y) | 12/05/2011 (m m d d y y y y) |
| Time | c. 10:00 ☑ a.m. ☐ p.m. | 17:00 ☐ a.m. ☑ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☑ 15 (Describe) | Clear ☑ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Andrew Last Name: Plier
Firm: OTIE

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Dave Last Name: Linskens
Facility/Firm:
Street: 1687 Princeton Pl #5
City/State/Zip: Green Bay, WI 54302

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature:
Print Name: Andrew J Plier
Firm: OTIE - US EPA Contractor

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☒ USEPA

# MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

| | | |
|---|---|---|
| Facility/Project Name: Sandies DCBL (513 Grand Ave, Little Chute) | Local Grid Location of Well: ☐N. ☐S. ft. ☐E. ☐W. ft. | Well Name: SDC-MW-2 |
| Facility License, Permit or Monitoring No. | Local Grid Origin ☐ (estimated: ☐) or Well Location ☑ Lat. 44° 16' 753N" Long. 88° 18' 969 W or | Wis. Unique Well No.: VV351 / DNR Well ID No. |
| Facility ID | St. Plane ft. N, ft. E. S/C/N | Date Well Installed: 11/16/2011 (m m d d y y y y) |
| Type of Well: Well Code 26 / EW | Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 21, T. 21 N, R. 18 ☑E ☐W | Well Installed By: Name (first, last) and Firm: Chad VanDeYacht Ground Source |
| Distance from Waste/Source ft. / Enf. Stds. Apply ☒ | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☒ Sidegradient d ☐ Downgradient n ☐ Not Known | Gov. Lot Number |

A. Protective pipe, top elevation 732.00 ft. MSL
B. Well casing, top elevation 731.5 ft. MSL
C. Land surface elevation 732 ft. MSL
D. Surface seal, bottom ft. MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☑ 41 / Other ☐

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☑ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ft. MSL or 1 ft.
F. Fine sand, top ft. MSL or 3 ft.
G. Filter pack, top ft. MSL or 3.5 ft.
H. Screen joint, top ft. MSL or 5 ft.
I. Well bottom ft. MSL or 20 ft.
J. Filter pack, bottom ft. MSL or 20.5 ft.
K. Borehole, bottom ft. MSL or 20.5 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.03 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: L ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe:
3. Surface seal: Bentonite ☐ 30 / Concrete ☑ 01 / Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in ☒3/8 in ☐1/2 in Bentonite chips ☐ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger
b. Volume added 85 $ft^3$
8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger
b. Volume added 5 $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Firm OTIE - U.S. EPA Contractor

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☑ USEPA

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Sandies DC & L - 513 Grand Ave Little Chute | Outagamie | SDC-MW-2 |
| **Facility License, Permit or Monitoring Number** | **County Code** | **Wis. Unique Well Number** | **DNR Well ID Number** |
| | -- | VV351 | --- |

1. Can this well be purged dry? ☑ Yes ☐ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☐ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☑ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 290 min.

4. Depth of well (from top of well casisng) 19.8 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 2.4 gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added N/A

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 5.32 ft. | 0.00 ft. |
| Date | b. 12/05/2011 (mm dd yyyy) | 12/05/2011 (mm dd yyyy) |
| Time | c. 11:15 ☑ a.m. ☐ p.m. | 04:05 ☐ a.m. ☑ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☑ 15 (Describe) | Clear ☑ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Andrew Last Name: Plier
Firm: OTIE

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Ray Last Name: Van Gheem
Facility/Firm: _____
Street: 108 West Main St.
City/State/Zip: Little Chute, WI 54140

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: Andrew J Plier
Firm: OTIE - U.S. EPA Contractor

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☒ USEPA

# MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

| | | |
|---|---|---|
| Facility/Project Name: Sandies DCPL (513 Girard Lt Hwy Court) | Local Grid Location of Well: ft. ☐N. ☐S. ft. ☐E. ☐W. | Well Name: SDC-MW-3 |
| Facility License, Permit or Monitoring No. | Local Grid Origin ☐ (estimated: ☐) or Well Location ☑ Lat. 44° 16' 749" N Long. 88° 18' 968" W or | Wis. Unique Well No.: VV352 / DNR Well ID No. |
| Facility ID | St. Plane ft. N, ft. E. S/C/N | Date Well Installed: 11/16/2011 (m m d d y y y y) |
| Type of Well: Well Code 26 / EW | Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 21 T. 21 N. R. 18 ☒E ☐W | Well Installed By: Name (first, last) and Firm: Chad Vanderyacht, Ground Source |
| Distance from Waste/Source ft. / Enf. Stds. Apply ☒ | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☒ Sidegradient d ☐ Downgradient n ☐ Not Known | Gov. Lot Number |

A. Protective pipe, top elevation 732.0 ft. MSL
B. Well casing, top elevation 731.5 ft. MSL
C. Land surface elevation 732 ft. MSL
D. Surface seal, bottom ft. MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 / Drilling Mud ☐ 03 None ☑ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ft. MSL or 1 ft.
F. Fine sand, top ft. MSL or 3 ft.
G. Filter pack, top ft. MSL or 3.5 ft.
H. Screen joint, top ft. MSL or 5 ft.
I. Well bottom ft. MSL or 20 ft.
J. Filter pack, bottom ft. MSL or 20.5 ft.
K. Borehole, bottom ft. MSL or 20.5 ft.
L. Borehole, diameter 8 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.03 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 1 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe:
3. Surface seal: Bentonite ☐ 30 / Concrete ☑ 01 / Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☐ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger
b. Volume added 85 ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger
b. Volume added 5 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 1.5 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: OTIE - USEPA Contractor

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☑ USEPA

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Sandies DC & L - 513 Grand Ave Little Chute | Outagamie | SDC-MW-3 |
| **Facility License, Permit or Monitoring Number** | **County Code** | **Wis. Unique Well Number** | **DNR Well ID Number** |
| | __ | VV352 | ___ |

1. Can this well be purged dry? ☑ Yes ☐ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☐ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☑ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 210 min.

4. Depth of well (from top of well casisng) 19.8 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 2.3 gal.

7. Volume of water removed from well 10.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added N/A

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 5.60 ft. | 0.00 ft. |
| Date | b. 12/05/2011 (mm dd yyyy) | 12/05/2011 (mm dd yyyy) |
| Time | c. 01:00 ☐ a.m. ☑ p.m. | 04:30 ☐ a.m. ☑ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☑ 15 (Describe) | Clear ☑ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | _____.__ mg/l | _____.__ mg/l |
| 15. COD | _____.__ mg/l | _____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Andrew Last Name: Plier
Firm: OTIE

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Roy Last Name: Van Gheem
Facility/Firm: _____
Street: 108 West Main St.
City/State/Zip: Little Chute, WI 54140

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: Andrew J Plier
Firm: OTIE - U.S EPA Contractor

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# GROUNDWATER MONITORING WELL INFORMATION FORM

Chapter 281 and 289, Wis. Stats.
Form 4400-89
Rev. 7-98

| Facility Name | Facility ID Number | License, Permit or Monitoring No. | Date | Completed By (Name and Firm) |
|---|---|---|---|---|
| Sandies DC&L | | | 11/16/11 | Caitlin Ruza - OTIE |

| WI Unique Well No | Well Name | DNR Well ID Number | Well Location | Dir. N/E | Dir. S/W | Date Established | Well Casing Diam. | Well Casing Type | Elevations Top of Well Casing | Elevations Ground Surface | Reference MSL (√) | Reference Site Datum (√) | Depths Screen Top | Depths Initial Groundwater | Depths Well Depth | Screen Length | Well Type | Well Status | Enf. Stds. | Grad-ient | Distance to Waste |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VV350 | SDC-MW-1 | | 44°16.759' | N | | 11/16/11 | 2 | P | 731.5 | 732 | ✓ | | 5 | 10 | 20 | 15 | 2G/ew | A | ✓ | S | 15.5 |
| | | | 88°18.973' | | W | | | | | | | | | | | | | | | | |
| VV351 | SDC-MW-2 | | 44°16.753' | N | | 11/16/11 | 2 | P | 731.5 | 732 | ✓ | | 5 | 8 | 20 | 15 | 2G/ew | A | ✓ | S | 29 |
| | | | 88°18.969' | | W | | | | | | | | | | | | | | | | |
| VV352 | SDC-MW-3 | | 44°16.749' | N | | 11/16/11 | 2 | P | 731.5 | 732 | ✓ | | 5 | 6 | 20 | 15 | 2G/ew | A | ✓ | S | 35 |
| | | | 88°18.968' | | W | | | | | | | | | | | | | | | | |

Location Coordinates Are:
☐ State Plane Coordinate ☐ Local Grid System
☐ Northern
☐ Central
☐ Southern

Grid Origin Location: (Check if estimated: ☒)
Lat. 44 ° 16 ' 759 " Long. 88 ° 18 ' 973 " or
St. Plane _____ ft. N. _____ ft. E. S/C/N Zone

Remarks:

Completion of this form is mandatory under s. NR 507.14 and NR 110.25 Wis. Adm. Code. Failure to file this form may result in forfeiture of not less than $10 nor more than $5,000 for each day of violation. Personally identifiable information provided is intended to be used by the Department for the purposes related to the waste management program.

**APPENDIX C**
**Quality Control**

**Field Quality Control Requirements**

Field QC samples will be collected and analyzed as necessary to assess the quality of data generated from sampling activities. These samples may include trip blanks, field blanks, equipment rinsate blanks, field duplicates, field split samples, MS samples, MSD samples, and matrix duplicate samples. Field QC measurements may include field replicate measurements and checks of instrument responses against QC standards.

Trip blanks are used to assess the potential for sample contamination during handling, shipment, and storage. Trip blanks are sample bottles filled by the analytical laboratory with organic-free water. The trip blanks are sealed and transported to the field; kept with empty sample bottles and then with the investigative samples throughout the field effort; and returned to the laboratory for analysis with the investigative samples. Trip blanks are never opened in the field. One trip blank is usually included within every shipping cooler of liquid samples to be analyzed for VOCs.

Field blanks are samples of the same or similar matrix as the actual investigative samples that are exposed to the sampling environment or equipment at the time of sampling. They are used to assess contamination resulting from ambient conditions. Field blanks are required for liquid matrices. For aqueous samples, field blanks consist of analyte-free water such as degasified organic-free water for VOC analysis, HPLC water for SVOC analysis, and de-ionized or de-mineralized water for inorganic analyses. Field blanks are generally not required for solid matrices but may be collected on a case-by-case basis. Typically, one field blank is collected for every 10 or fewer liquid investigative samples.

Equipment rinsate blanks are collected when sampling equipment is used. These blanks assess the cleanliness of sampling equipment and the effectiveness of equipment decontamination. Equipment rinsate blanks are collected by pouring analyte-free water over surfaces of cleaned sampling equipment that contact sample media. Equipment rinsate blanks are collected after sampling equipment has been decontaminated but prior to being reused for sampling. Equipment rinsate blanks are typically collected for each type of decontaminated sampling equipment.

Field duplicate samples are independent samples collected as close as possible in space and time to the original investigative sample. Immediately following collection of the original sample, the field duplicate sample is collected using the same collection method. Care should be taken to collect the field duplicate sample as close to the location of the original sample as possible. Field duplicate samples can measure how sampling and field procedures influence the precision of an environmental measurement. They can also provide information on the heterogeneity of a sampling location. Typically, field duplicates are collected at a frequency of one for every 10 investigative samples of the same matrix type.

Field split samples are usually a set of two or more samples taken from a larger homogenized sample. The larger sample is usually collected from a single sampling location, but can also be a composite sample. Field split samples can be sent to two or more laboratories and are used to provide comparison data between the laboratories. Regulatory agencies involved in a project may request that field split samples be collected to monitor how closely laboratories are meeting project-specific QA objectives.

MS/MSD samples are typically collected for analysis by organic methods, and also often for analysis by inorganic methods. Solid MS/MSDs usually require no extra volume. Each liquid MS/MSD sample is a single sample, usually collected from a single sampling location at triple the normal sample volume. MS and matrix duplicate samples are typically collected for inorganic analysis. The MS sample and matrix duplicate sample are each a single sample, usually collected from a single location at double the normal sample volume. In the laboratory, MS/MSD samples and MS samples are spiked with known amounts of analytes. Matrix duplicate samples are not spiked. Analytical results of MS/MSDs are used to measure the precision and accuracy of the laboratory organic (or inorganic) analytical program and MSs are used to measure the accuracy of the inorganic analytical program. Matrix duplicate samples are used to

measure the precision of the inorganic analytical program. Each of these QC samples is typically collected and analyzed at a frequency of one for every 20 investigative samples per matrix.
QC checks for field measurements will consist primarily of initial and continuing calibration checks of field equipment. When applicable, QC check standards independent of the calibration standards will be used to check equipment performance. For example, when checking the accuracy of field equipment such as pH meters, a standard buffer solution independent of the calibration standards may be used. Precision of field measurements will usually be checked by taking replicate measurements. To the extent possible, OTIE will use USEPA-approved field methods. If approved methods are not available, OTIE SOPs will be referenced in the project-specific QAPP. The types and frequencies of field QC measurements and the QC limits for these measurements will be specified in the project-specific QAPP.

**TABLE C-1**
**Required Sample Volumes, Containers, Preservation Techniques, and Holding Time**

| Matrix | Parameter | Analytical Method[a] | Volume and Container | Preservation Techniques | Holding Time[b] (Extraction/Analysis) |
|---|---|---|---|---|---|
| Water | Volatile organic compounds (VOC) | SW-846: 8015B, 8021B, 8260B<br><br>CLP: OLC03.2, OLM04.3, SOM01.1 | Three 40-mL glass vials with Teflon®-lined septum | To pH # 2 with hydrochloric acid; sodium thiosulfate if residual chlorine; store at 4ºC | NA[c]/14 days |

Notes:
mL = Milliliter
[a] Analytical methods listed are from either SW-846 (Test Methods for Evaluating Solid Waste) or CLP (Contract Laboratory Program) Statements of Work.
[b] Holding time is measured from the time of sample collection to the time of sample extraction and analysis.
[c] NA = Not applicable

Oneida Total Integrated Enterprises
100 W Monroe Street, Suite 300 ● Chicago, IL 60607 ● (312) 220-7000 ● (312) 220-7004 (Fax)

**MEMORANDUM**

| | |
|---|---|
| **Date:** | December 22, 2011 |
| **To:** | Naren Babu, Project Manager, OTIE<br>Superfund Technical Assessment and Response Team (START) for Region 5 |
| **Prepared by:** | Renea Anglin, START chemist for Region 4 |
| **QA/QC Concurrence by:** | Russell Henderson, START Senior Chemist for Region 4 |
| **Subject:** | Data Validation for Sandies DC&L Removal<br>Little Chute, WI<br><br>Project TDD No.<br><br>Laboratory: Microbac 250 W 84th Dr, Merrillville, IN<br>Sample Delivery Group (SDG): 11L0574 |

## 1.0 INTRODUCTION

The START chemist for Region 4 validated analytical data for 2 samples, 1 duplicate sample and 1 Trip Blank for volatile organic compounds (VOCs). Samples were collected at the Sandies DC&L Removal on December 13, 2011. The samples were analyzed under SDG 11L0574 by Microbac of Merrillville, Indiana using U.S. Environmental Protection Agency (U.S. EPA) methods 8260B.

Laboratory data was validated using guidelines set forth in the U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic (EPA 540-R-08-01, June 2008) and Inorganic Data Review (EPA 540-R-10-011, January 2010) and applicable methodologies. The purpose of the chemical data quality evaluation process is to assess the usability of data for the project decision-making process.

Organic data validation consisted of a review of the following QC audits:

- Chain of custody and sample receipt forms review
- Sample preservation and holding time
- Blank results
- Surrogate recoveries
- Matrix spike and Matrix Spike Duplicate (MS/MSD) recovery results
- Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) recovery results

Section 2.0 of this memorandum discusses the results of organic data validation. Section 3.0 presents an overall assessment of the data. The attachment to this memorandum contains the laboratory reporting forms as well as START's handwritten data qualifications where warranted.

## 2.0 ORGANIC DATA VALIDATION RESULTS

The results of START's organic data validation are summarized below by QC audit reviewed. The data qualifiers listed below were applied to sample analytical results where warranted (see attachment):

- J – The analyte was detected. The reported concentration was considered estimated.
- U – The analyte was not detected.
- UJ – The analyte was not detected. The reporting limit was considered estimated.

After the START project staff received the data package, it was inventoried for completeness and then reviewed according to matrix-specific protocols and data quality objectives established for the project.

## 2.1 WATER SAMPLES BY METHOD 8260B

### *2.1.1 SAMPLE HANDLING*

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. The sample were collected on December 13, 2011 and received at the laboratory on December 14, 2011.

No discrepancies were noted.

### *2.1.2 SAMPLE PRESERVATION AND HOLDING TIME*

Samples were analyzed within holding time criteria.

No discrepancies were noted.

### *2.1.3 BLANK RESULTS*

The purpose of laboratory (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. A laboratory method blank sample (B022846-BLK1) was run with this SDG.

No discrepancies were noted.

### *2.1.4 SURROGATE RECOVERIES*

Laboratory performance on individual samples is established by means of fortifying each sample with surrogate compounds (System Monitoring Compounds). Surrogate spike compounds included Dibromofluoromethane, Toluene-d8, 4-Bromofluorobenzene and 1,2-Dichloroethane-d4.

No discrepancies were noted.

### *2.1.5 MS/MSD RECOVERY RESULTS*

Data for MS/MSDs are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis.

An MS/MSD was not requested with this SDG.

### *2.1.6 LCS and LCSD RECOVERY RESULTS*

Data for the LCS and LCSD is generated to provide information on the accuracy of the analytical method and on the laboratory performance. The LCS and LCSD are fortified with the full list of VOC compounds and analyzed with each batch of samples. The LCS and LCSD accuracy performance is measured by percent recovery.

The LCS and LCSD run with the samples were within limits for percent recoveries.

### *2.1.7 FIELD DUPLICATES*

Data for field duplicates were collected and analyzed for chemical constituents to measure the cumulative uncertainty (i.e., precision) of the sample collection, splitting, handling, storage, preparation and analysis operations, as well as natural sample heterogeneity that is not eliminated through simple mixing in the field. Field duplicates are two samples prepared by mixing a volume of sample and splitting it into two separate sample containers that are labeled as individual field samples.

Sample SDC-MW-3 had a duplicate collected (SDC-MW-3D) for VOC. No deficiencies were noted.

### *2.1.8 GENERAL LABORATORY OBSERVATIONS*

Samples SDC-MW-3 and SDC-MW-3Dwere diluted due to the abundance of target analytes. The diluted value for tetrachloroethene only was reported, all other values are from the non-diluted run.

## 3.0 OVERALL ASSESSMENT OF DATA

The analytical results meet the data quality objectives defined by the applicable method and validation guidance documentation. The analytical data is usable and acceptable as reported by the laboratory.

**ATTACHMENT**

**SUMMARY OF ANALYTICAL RESULTS**

**AND**

**CHAIN-OF-CUSTODY**

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-2
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-01
**Sampled:** 12/13/2011 10:55
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| 1,1,1,2-Tetrachloroethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,1,1-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,1,2,2-Tetrachloroethane | A | ***ND*** | 1.4 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,1,2-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,1-Dichloroethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,1-Dichloroethene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,2-Dichloroethane | A | ***ND*** | 1.2 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 1,2-Dichloropropane | A | ***ND*** | 1.0 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| 2-Butanone | A | ***ND*** | 3.6 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| 2-Hexanone | A | ***ND*** | 2.4 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| 4-Methyl-2-Pentanone | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Acetone | A | ***6.9*** | 5.8 | 50 | J | µg/L | 1 | 12/16/2011 12:00 |
| Acrolein | A | ***ND*** | 16 | 100 | | µg/L | 1 | 12/16/2011 12:00 |
| Acrylonitrile | A | ***ND*** | 13 | 100 | | µg/L | 1 | 12/16/2011 12:00 |
| Benzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Bromodichloromethane | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Bromoform | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Bromomethane | A | ***ND*** | 1.8 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Carbon Disulfide | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Carbon tetrachloride | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Chlorobenzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Chloroethane | A | ***ND*** | 2.3 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Chloroform | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Chloromethane | A | ***ND*** | 1.0 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| cis-1,2-Dichloroethene | A | ***3.7*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:00 |
| cis-1,3-Dichloropropene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Dibromochloromethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Ethylbenzene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| m,p-Xylene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Methylene chloride | A | ***ND*** | 3.1 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Methyl-t-Butyl Ether | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| o-Xylene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Styrene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Tetrachloroethene | A | ***8.0*** | 1.3 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Toluene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| trans-1,2-Dichloroethene | A | ***ND*** | 1.1 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| trans-1,3-Dichloropropene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| Trichloroethene | A | ***1.4*** | 0.90 | 5.0 | J | µg/L | 1 | 12/16/2011 12:00 |
| Trichlorofluoromethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Vinyl Acetate | A | ***ND*** | 1.5 | 10 | | µg/L | 1 | 12/16/2011 12:00 |
| Vinyl chloride | A | ***ND*** | 0.90 | 2.0 | | µg/L | 1 | 12/16/2011 12:00 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-2
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-01
**Sampled:** 12/13/2011 10:55
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| Total 1,2-Dichloroethene | M | ***3.7*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:00 |
| Total Xylenes | M | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:00 |
| *Surr: 1,2-Dichloroethane-d4* | S | 110.00 | | 74.5-132 | | %REC | 1 | 12/16/2011 12:00 |
| *Surr: 4-Bromofluorobenzene* | S | 97.30 | | 80-120 | | %REC | 1 | 12/16/2011 12:00 |
| *Surr: Dibromofluoromethane* | S | 103.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:00 |
| *Surr: Toluene-d8* | S | 99.20 | | 80-120 | | %REC | 1 | 12/16/2011 12:00 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-3
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-02
**Sampled:** 12/13/2011 12:20
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| 1,1,1,2-Tetrachloroethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,1,1-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,1,2,2-Tetrachloroethane | A | ***ND*** | 1.4 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,1,2-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,1-Dichloroethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,1-Dichloroethene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,2-Dichloroethane | A | ***ND*** | 1.2 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 1,2-Dichloropropane | A | ***ND*** | 1.0 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| 2-Butanone | A | ***ND*** | 3.6 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| 2-Hexanone | A | ***ND*** | 2.4 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| 4-Methyl-2-Pentanone | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Acetone | A | ***ND*** | 5.8 | 50 | | µg/L | 1 | 12/16/2011 12:30 |
| Acrolein | A | ***ND*** | 16 | 100 | | µg/L | 1 | 12/16/2011 12:30 |
| Acrylonitrile | A | ***ND*** | 13 | 100 | | µg/L | 1 | 12/16/2011 12:30 |
| Benzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Bromodichloromethane | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Bromoform | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Bromomethane | A | ***ND*** | 1.8 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Carbon Disulfide | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Carbon tetrachloride | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Chlorobenzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Chloroethane | A | ***ND*** | 2.3 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Chloroform | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Chloromethane | A | ***ND*** | 1.0 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| cis-1,2-Dichloroethene | A | ***4.6*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:30 |
| cis-1,3-Dichloropropene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Dibromochloromethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Ethylbenzene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| m,p-Xylene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Methylene chloride | A | ***ND*** | 3.1 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Methyl-t-Butyl Ether | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| o-Xylene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Styrene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Tetrachloroethene | A | ***310*** | 13 | 50 | | µg/L | 10 | 12/16/2011 14:28 |
| Toluene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| trans-1,2-Dichloroethene | A | ***ND*** | 1.1 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| trans-1,3-Dichloropropene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Trichloroethene | A | ***19*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| Trichlorofluoromethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Vinyl Acetate | A | ***ND*** | 1.5 | 10 | | µg/L | 1 | 12/16/2011 12:30 |
| Vinyl chloride | A | ***ND*** | 0.90 | 2.0 | | µg/L | 1 | 12/16/2011 12:30 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-3
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-02
**Sampled:** 12/13/2011 12:20
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| Total 1,2-Dichloroethene | M | ***4.6*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:30 |
| Total Xylenes | M | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:30 |
| *Surr: 1,2-Dichloroethane-d4* | S | 109.00 | | 74.5-132 | | %REC | 1 | 12/16/2011 12:30 |
| *Surr: 4-Bromofluorobenzene* | S | 101.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:30 |
| *Surr: Dibromofluoromethane* | S | 105.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:30 |
| *Surr: Toluene-d8* | S | 103.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:30 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-3D
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-03
**Sampled:** 12/13/2011 12:45
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| 1,1,1,2-Tetrachloroethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,1,1-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,1,2,2-Tetrachloroethane | A | ***ND*** | 1.4 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,1,2-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,1-Dichloroethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,1-Dichloroethene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,2-Dichloroethane | A | ***ND*** | 1.2 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 1,2-Dichloropropane | A | ***ND*** | 1.0 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| 2-Butanone | A | ***ND*** | 3.6 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| 2-Hexanone | A | ***ND*** | 2.4 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| 4-Methyl-2-Pentanone | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Acetone | A | ***ND*** | 5.8 | 50 | | µg/L | 1 | 12/16/2011 12:59 |
| Acrolein | A | ***ND*** | 16 | 100 | | µg/L | 1 | 12/16/2011 12:59 |
| Acrylonitrile | A | ***ND*** | 13 | 100 | | µg/L | 1 | 12/16/2011 12:59 |
| Benzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Bromodichloromethane | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Bromoform | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Bromomethane | A | ***ND*** | 1.8 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Carbon Disulfide | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Carbon tetrachloride | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Chlorobenzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Chloroethane | A | ***ND*** | 2.3 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Chloroform | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Chloromethane | A | ***ND*** | 1.0 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| cis-1,2-Dichloroethene | A | ***4.5*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:59 |
| cis-1,3-Dichloropropene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Dibromochloromethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Ethylbenzene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| m,p-Xylene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Methylene chloride | A | ***ND*** | 3.1 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Methyl-t-Butyl Ether | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| o-Xylene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Styrene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Tetrachloroethene | A | ***310*** | 13 | 50 | | µg/L | 10 | 12/16/2011 14:57 |
| Toluene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| trans-1,2-Dichloroethene | A | ***ND*** | 1.1 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| trans-1,3-Dichloropropene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Trichloroethene | A | ***19*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| Trichlorofluoromethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Vinyl Acetate | A | ***ND*** | 1.5 | 10 | | µg/L | 1 | 12/16/2011 12:59 |
| Vinyl chloride | A | ***ND*** | 0.90 | 2.0 | | µg/L | 1 | 12/16/2011 12:59 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-3D
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-03
**Sampled:** 12/13/2011 12:45
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| Total 1,2-Dichloroethene | M | ***4.5*** | 0.80 | 5.0 | J | µg/L | 1 | 12/16/2011 12:59 |
| Total Xylenes | M | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 12:59 |
| *Surr: 1,2-Dichloroethane-d4* | S | 108.00 | | 74.5-132 | | %REC | 1 | 12/16/2011 12:59 |
| *Surr: 4-Bromofluorobenzene* | S | 98.70 | | 80-120 | | %REC | 1 | 12/16/2011 12:59 |
| *Surr: Dibromofluoromethane* | S | 103.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:59 |
| *Surr: Toluene-d8* | S | 102.00 | | 80-120 | | %REC | 1 | 12/16/2011 12:59 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** SDC-MW-1
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-04
**Sampled:** 12/13/2011 13:50
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| 1,1,1,2-Tetrachloroethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,1,1-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,1,2,2-Tetrachloroethane | A | ***ND*** | 1.4 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,1,2-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,1-Dichloroethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,1-Dichloroethene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,2-Dichloroethane | A | ***ND*** | 1.2 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 1,2-Dichloropropane | A | ***ND*** | 1.0 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| 2-Butanone | A | ***ND*** | 3.6 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| 2-Hexanone | A | ***ND*** | 2.4 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| 4-Methyl-2-Pentanone | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Acetone | A | ***ND*** | 5.8 | 50 | | µg/L | 1 | 12/16/2011 13:29 |
| Acrolein | A | ***ND*** | 16 | 100 | | µg/L | 1 | 12/16/2011 13:29 |
| Acrylonitrile | A | ***ND*** | 13 | 100 | | µg/L | 1 | 12/16/2011 13:29 |
| Benzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Bromodichloromethane | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Bromoform | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Bromomethane | A | ***ND*** | 1.8 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Carbon Disulfide | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Carbon tetrachloride | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Chlorobenzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Chloroethane | A | ***ND*** | 2.3 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Chloroform | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Chloromethane | A | ***ND*** | 1.0 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| cis-1,2-Dichloroethene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| cis-1,3-Dichloropropene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Dibromochloromethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Ethylbenzene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| m,p-Xylene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Methylene chloride | A | ***ND*** | 3.1 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Methyl-t-Butyl Ether | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| o-Xylene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Styrene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Tetrachloroethene | A | ***ND*** | 1.3 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Toluene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| trans-1,2-Dichloroethene | A | ***ND*** | 1.1 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| trans-1,3-Dichloropropene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Trichloroethene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Trichlorofluoromethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Vinyl Acetate | A | ***ND*** | 1.5 | 10 | | µg/L | 1 | 12/16/2011 13:29 |
| Vinyl chloride | A | ***ND*** | 0.90 | 2.0 | | µg/L | 1 | 12/16/2011 13:29 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

| | | | |
|---|---|---|---|
| **Client:** | Oneida Total Integrated Enterprises | | |
| **Client Project:** | 2010101-7903 | | |
| **Client Sample ID:** | SDC-MW-1 | **Work Order/ID:** | 11L0574-04 |
| **Sample Description:** | | **Sampled:** | 12/13/2011 13:50 |
| **Matrix:** | Aqueous | **Received:** | 12/14/2011 9:30 |

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| Total 1,2-Dichloroethene | M | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| Total Xylenes | M | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:29 |
| *Surr: 1,2-Dichloroethane-d4* | S | 113.00 | | 74.5-132 | | %REC | 1 | 12/16/2011 13:29 |
| *Surr: 4-Bromofluorobenzene* | S | 99.40 | | 80-120 | | %REC | 1 | 12/16/2011 13:29 |
| *Surr: Dibromofluoromethane* | S | 104.00 | | 80-120 | | %REC | 1 | 12/16/2011 13:29 |
| *Surr: Toluene-d8* | S | 103.00 | | 80-120 | | %REC | 1 | 12/16/2011 13:29 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** Trip Blank
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-05
**Sampled:** 12/13/2011 0:00
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| 1,1,1,2-Tetrachloroethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,1,1-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,1,2,2-Tetrachloroethane | A | ***ND*** | 1.4 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,1,2-Trichloroethane | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,1-Dichloroethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,1-Dichloroethene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,2-Dichloroethane | A | ***ND*** | 1.2 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 1,2-Dichloropropane | A | ***ND*** | 1.0 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| 2-Butanone | A | ***ND*** | 3.6 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| 2-Hexanone | A | ***ND*** | 2.4 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| 4-Methyl-2-Pentanone | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Acetone | A | ***ND*** | 5.8 | 50 | | µg/L | 1 | 12/16/2011 13:58 |
| Acrolein | A | ***ND*** | 16 | 100 | | µg/L | 1 | 12/16/2011 13:58 |
| Acrylonitrile | A | ***ND*** | 13 | 100 | | µg/L | 1 | 12/16/2011 13:58 |
| Benzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Bromodichloromethane | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Bromoform | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Bromomethane | A | ***ND*** | 1.8 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Carbon Disulfide | A | ***ND*** | 1.7 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Carbon tetrachloride | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Chlorobenzene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Chloroethane | A | ***ND*** | 2.3 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Chloroform | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Chloromethane | A | ***ND*** | 1.0 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| cis-1,2-Dichloroethene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| cis-1,3-Dichloropropene | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Dibromochloromethane | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Ethylbenzene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| m,p-Xylene | A | ***ND*** | 1.7 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Methylene chloride | A | ***ND*** | 3.1 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Methyl-t-Butyl Ether | A | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| o-Xylene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Styrene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Tetrachloroethene | A | ***ND*** | 1.3 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Toluene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| trans-1,2-Dichloroethene | A | ***ND*** | 1.1 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| trans-1,3-Dichloropropene | A | ***ND*** | 0.70 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Trichloroethene | A | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Trichlorofluoromethane | A | ***ND*** | 1.1 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Vinyl Acetate | A | ***ND*** | 1.5 | 10 | | µg/L | 1 | 12/16/2011 13:58 |
| Vinyl chloride | A | ***ND*** | 0.90 | 2.0 | | µg/L | 1 | 12/16/2011 13:58 |



12-22-11

Microbac®

# Analytical Results

**Date:** *Tuesday, December 20, 2011*

**Client:** Oneida Total Integrated Enterprises
**Client Project:** 2010101-7903
**Client Sample ID:** Trip Blank
**Sample Description:**
**Matrix:** Aqueous

**Work Order/ID:** 11L0574-05
**Sampled:** 12/13/2011 0:00
**Received:** 12/14/2011 9:30

| Analyses | AT | Result | MDL | RL | Qual | Units | DF | Analyzed |
|---|---|---|---|---|---|---|---|---|
| | | Method: **SW-846 8260B** | | | | | | Analyst: **jln** |
| **Volatile Organic Compounds** | | | | | | | | Prep Date/Time: **12/16/2011 08:37** |
| Total 1,2-Dichloroethene | M | ***ND*** | 0.80 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| Total Xylenes | M | ***ND*** | 0.90 | 5.0 | | µg/L | 1 | 12/16/2011 13:58 |
| *Surr: 1,2-Dichloroethane-d4* | S | 108.00 | | 74.5-132 | | %REC | 1 | 12/16/2011 13:58 |
| *Surr: 4-Bromofluorobenzene* | S | 96.90 | | 80-120 | | %REC | 1 | 12/16/2011 13:58 |
| *Surr: Dibromofluoromethane* | S | 103.00 | | 80-120 | | %REC | 1 | 12/16/2011 13:58 |
| *Surr: Toluene-d8* | S | 102.00 | | 80-120 | | %REC | 1 | 12/16/2011 13:58 |



12-22-11

11L0574 Kevin Falvey
Oneida Total Integrated Enterprises
Little Chute WI

# Microbac

Samples Submitted to:
[ ] 250 West 84th Drive, Merrillville, IN 46410, Tel: 219-769-8378, Fax: 219-769-1664
[ ] 5713 West 85th Street, Indianapolis, IN 46278, Tel: 317-872-1375, Fax: 317-872-1379

## Chain of Custody Record

Number 107109

Instructions on back

Client Name: Oneida Total Integrated Enterprises
Address: 1033 N. Mayfair Rd Suite 200
City, State, Zip: Milwaukee WI 53226
Contact: Andrew Plier
Telephone #: 414-254-8192

Project: Sandies PCE Removal
Location: Little Chute, WI
PO #: SCS-75
Compliance Monitoring? [ ] Yes(1) [ ] No
(1)Agency/Program

Turnaround Time
[X] Routine (7 working days)
[ ] RUSH* (notify lab)
(needed by)

Report Type
[ ] Results Only [X] Level II
[ ] Level III [ ] Level III CLP-like
[ ] Level IV [ ] Level IV CLP-like
[ ] EDD

Sampled by (PRINT): Andrew Plier
Sampler Signature: AP
Sampler Phone #: 414-303-6825
Send Report via [ ] Mail [ ] Telephone [ ] Fax (fax #)
[X] e-mail (address): aplier@otie.com

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

12/14/2011

| Client Sample ID | Matrix* | Grab | Composite | Filtered | Date Collected | Time Collected | No. of Containers | Requested Analyses → Preservative Types ** ↓ | VOC | For Lab Use Only 11L0574 |
|---|---|---|---|---|---|---|---|---|---|---|
| SDC-MW-2 | W | X | | | 12/13 | 1055 | 3 | HCL | X | 01 |
| SDC-MW-3 | W | X | | | 12/13 | 1220 | 3 | HCL | X | 02 |
| SDC-MW-3D | W | X | | | 12/13 | 1245 | 3 | HCL | X | 03 |
| SDC-MW-1 | W | X | | | 12/13 | 1350 | 3 | HCL | X | 04 |
| | | | | | | | | | | |
| Trip Blanks | | | | | 12/13 | | 2 | | | 05 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Possible Hazard Identification: [ ] Hazardous [X] Non-Hazardous [ ] Radioactive
Sample Disposition: [X] Dispose as appropriate [ ] Return [ ] Archive

Comments
Reference SCS-75
CC John Behrens
j.behrens@erllc.com

Sample temperature upon receipt in degrees C =

| Relinquished By (signature) | Date/Time | Received By (signature) | Date/Time |
|---|---|---|---|
| AP Andrew Plier | 12/13/11 1700 | | |
| Relinquished By (signature) | Date/Time | Received By (signature) | Date/Time |
| | | | |
| Relinquished By (signature) | Date/Time | Received for Lab By (signature) | Date/Time |
| | | [signature] | 12/14/11 0930 |

rev. 11/04/04





12-22-11