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NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

New York State Department of Environmental Conservation – Division of Environmental Remediation

PERIODIC REVIEW REPORT

Oswego Castings Site

Site Number 7-38-033

June 2017

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Site Number 7-38-033

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June 2017

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ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
Arcadis	Arcadis CE, Inc.
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
EC	Engineering Control
Ft	Feet
GPM	Gallons per minute
IC	Institutional Control
IRM	Interim Remedial Measure
µg/L	Micrograms per liter
mg/L	Milligrams per liter
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NAPL	Non-Aqueous Phase Liquid
OU	Operable Unit
O&M	Operation and Maintenance
PCB	Polychlorinated biphenyl
REDOX	Oxidation-reduction
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
USEPA	United States Environmental Protection Agency
SVOC	Semi-Volatile Organic Compound
SMP	Site Management Plan
SVI	Soil Vapor Intrusion
TDS	Total Dissolved Solids
VOC	Volatile Organic Compound
WA	Work Assignment

1 EXECUTIVE SUMMARY

The New York State Department of Environmental Conservation (NYSDEC) has issued a Work Assignment (# D007618-11) to Arcadis CE, Inc., (Arcadis) for Operation, Maintenance, and Monitoring at the Oswego Castings Site (NYSDEC site number 7-38-033) in New York State (the Site). This Periodic Review Report (PRR) documents the findings and observations associated with the monitoring program for the Site.

The Site was found to have been contaminated with polychlorinated biphenyls (PCBs) during operations as an aluminum die casting facility between 1956 and the late 1980s. The PCB contamination was associated with the soils, groundwater, surface water, and pond sediment. In 1997 and 2000, two Records of Decision (RODs) (NYSDEC 1997 and 2000; respectively) were issued. Subsequent Interim Remedial Measures (IRMs) were implemented and completion of remedial work at the Site included:

- Excavation of surface and subsurface soils and foundry wastes from the core and sand disposal area for off-site disposal
- Excavation of wetland sediments for off-site disposal
- Removal of septic tank and tank contents for off-site disposal
- Installation of a crushed stone cover over the landfill area
- Construction of a minimum 6-inch thick reinforced concrete pad, with an 8-inch crushed stone base to cover contaminated soils
- Dewatering of the cooling water pond to the extent necessary and installation of a geotextile and 12-inch gravel layer
- Imposition of Institutional Controls including requirements for monitoring of the Site

Site monitoring currently involves inspection of the concrete slab, landfill, former cooling water pond area, and building floors which are the cover preventing access to contaminated soils beneath. Additionally, groundwater monitoring takes place every five quarters to assess the water quality and potential movement of contamination.

Recent inspections indicate that the landfill, former cooling water pond, and yard area protective covers appear to be unchanged and are performing as intended. In 2016, groundwater samples contained concentrations of PCBs greater than the corresponding NYSDEC Standards at three sampling locations. The detections are generally in areas where historical contamination was known to exist.

The remedial actions have performed as expected and continued O&M and monitoring should be conducted in accordance with the SMP. However, minor edits are recommended to the O&M Checklist to properly document the inspection results of the pond area and the former cooling water pond protective soil cover.

2 SITE OVERVIEW

2.1 Location and Features

The Oswego Castings site is located at 375 Mitchell Street, Oswego, Oswego County, New York (Figure 2-1). The Site is approximately 10 acres and contains three former manufacturing buildings. A small pond (approximately one-third acre) is located west of the buildings. The site is currently zoned industrial and was most-recently the location of a saw mill operation; however, the Site is now vacant. The site is listed as a Class 4 site on the NYSDEC Registry of Inactive Hazardous Waste Sites.

2.2 Site History and Remediation

The site was formerly owned by B and K Metals Inc. (B&K Metals; previously Oberdorfer Foundries, Inc.). Oswego Castings Inc., a subsidiary of Oberdorfer Foundries, Inc. operated an aluminum die casting facility on the site from 1956 to1986. PCBs were detected on the site in core sands, foundry waste, and wastewater discharged to a process line/septic tank discharge line. The expected sources of the PCBs include leaks in hydraulic equipment and binders or coatings applied to core sand surfaces. In July 1993, B&K Metals entered into an Order on Consent with the NYSDEC for a Remedial Investigation/Feasibility Study (RI/FS). The RI/FS was conducted between July 1993 and February 1997. A Record of Decision (ROD) was issued for Operable Unit (OU)-1 in 1997 (NYSDEC 1997). The OU-1 ROD called for excavation of approximately 4,100 cubic yards of soil, sediment, and foundry sand. In addition, the ROD called for removal of the septic tank and placement of crushed stone over the existing on-site landfill. A ROD for OU-2 was issued in 2000 (NYSDEC 2000), calling for construction of a concrete pad over the yard area and floor of the saw mill in addition to applying a geotextile cover/stone to the former cooling water pond (Figure 2-2), construction of a new pond, and extending the roof drain from the former cooling water pond to the newly constructed pond. As part of IRMs for the Site, the foundry roof was cleaned to control a PCB source, and PCB impacted soil at the former Loading Dock was removed.

In May 2010, the stone buffer for the landfill was re-graded and landscape fabric and new stone were applied to the landfill cap. In April 2010, groundwater monitoring well MW-2 was replaced and three new monitoring wells were installed (MW-5, MW-6, and MW-7). Well locations are presented on Figure 2-3.

An Environmental Notice (EN) was placed on the site in May 2012 as an institutional control (IC) for the remedy. The purpose of the EN was to limit the use of the site to industrial and/or commercial use; prevent owners from disturbing the remedial controls; prevent use of on-site groundwater; and grant access to the NYSDEC and its agents for purposes of maintaining the remedy.

In October 2012, Arcadis was issued WA D007618-11 to perform O&M and monitoring at the site.

According to the Oswego County Real Property database, the property was acquired by the City of Oswego from Great Lakes Veneer Corp. in November 2012.

Based on routine site inspections performed by Arcadis and/or NYSDEC since 2012, the vacant buildings at the site are deteriorating, are not secured, and have been vandalized. In addition, copper (wires and/or pipe) have been removed from the buildings and a pad-mounted transformer.

On April 23, 2015, oil spills were identified in two on-site buildings that resulted from deteriorated and/or tipped storage containers. Upon identification of the spills, the incident was reported by Arcadis to the NYSDEC Project Manager and NYSDEC Spills Hotline. The associated NYSDEC Spill Number is 1500821. The Spills Division removed the containers and cleaned the spill areas. According to the NYSDEC Spills Database, the incident was closed on October 22, 2015.

A NYSDEC-approved SMP was prepared by Arcadis in February 2016. The SMP provides procedures for O&M and monitoring to manage the remaining contamination at the site.

3 REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The remediation goals selected for this Site, according to each ROD (NYSDEC 1997 and 2000) are as follows:

- Reduce, control, or eliminate, to the extent practicable, the contamination present within the soils/waste on the Site and the generation of leachate within the fill mass.
- Eliminate the threat to surface waters and Lake Ontario by eliminating future contaminated surface run-off from the contaminated soils on the Site, and by reducing, controlling, or eliminating contaminated wetland sediment migration.
- Prevent, to the extent possible, migration of the contaminants in the landfill to groundwater.
- Provide for attainment of SCGs for groundwater quality at the limits of the area of concern, to the extent practicable.
- Eliminate, to the extent practicable, the potential for direct human contact with PCB contaminated soil and dust.
- Eliminate, to the extent practicable, the exposure for fish and wildlife to levels of PCBs above standards/guidance values.

The selected remedies for the Site were successfully implemented following the guidance provided in each of the ROD documents (NYSDEC 1997 and 2000). Surface soil, subsurface soil, sediment, and foundry wastes containing PCB concentrations greater than 10 ppm were excavated and disposed off-site. Surface soil containing PCB concentrations greater than 1 ppm were excavated to a depth of 12 inches. The excavated material that contained PCB concentrations less than 10 ppm were consolidated and disposed on-site in the former cooling water pond and Landfill. The wastes were then covered with a geotextile and stone barrier layer. PCBs at concentrations greater than 50 ppm remain beneath certain areas of the Sawmill Building slab and beneath the concrete cap in the Yard Area (Figure 2-2) (NYSDEC 2002).

A SMP is in place and provides information regarding O&M and monitoring activities for the selected remedy. The SMP includes an EN that restricts excavation or disturbance of the remedy. Therefore, only those who are actively performing work on the site, either in accordance the SMP, or at the direction of the NYSDEC, would likely be exposed to the remaining site contamination. In addition, groundwater use restrictions are in place to prevent use or ingestion of groundwater.

Based on the current site management activities, including inspections, groundwater monitoring, and the EN that is in place for the Site, it appears that the selected remedies are performing as intended and are therefore effective and protective of human health and the environment.

The following sections provide detail to the O&M and Monitoring.

4 OPERATION AND MAINTENANCE

Since the last (2014) PRR cycle, O&M activities have been performed in accordance with a NYSDEC-approved SMP. Arcadis performed the O&M and monitoring activities on April 23, 2015 and September 13, 2016.

The O&M activities included inspection of the respective landfill, former cooling water pond, and yard area protective covers (Figure 2-2) which are the Engineering Controls (EC) that have been established at the Site. In addition, a general inspection of site features (buildings and grounds) is also completed to assess for potential environmental hazards. An O&M Checklist (Appendix A) was used to document the condition of the ECs during the 2015 and 2016 inspections. Photographs from the 2016 inspection are provided in Appendix B.

4.1 General Site Conditions

Based on the 2015 and 2016 observations, the buildings are generally not secured and copper wire and/or plumbing components have apparently been removed. Gravel and asphalt piles were identified in the concrete block building, presumably from the Town of Oswego. Several open drums of sand were also identified in the former saw mill building. In addition, in April 2015, a pad-mounted transformer on the eastern side of the former sawmill building was vandalized and found to have its access doors open and internal components cut and removed. The transformer had no visible indications of leaks. National Grid was contacted during the site inspection and the incident reported. A National Grid field technician was dispatched to the site on April 23, 2015 to inspect the transformer and secured the doors with a new lock.

As indicated in Section 2.2, oil spills were identified in two of the on-site buildings during the April 2015 site inspection and reported to the NYSDEC. In 2016, Arcadis inspected and photographed the spill areas following closure of the spill incident. Figure 4-1 shows the locations of the spills and photographs comparing when the spills were identified (April 23, 2015) and during the September 13, 2016 sampling event. As shown in Figure 4-1, the drums and containers of the spilled materials were removed and oil/staining on the floors cleaned. The NYSDEC Spill Record is provided in Appendix C (NYSDEC 2017).

4.2 Landfill Cover

The landfill cover was installed to contain PCB impacted wastes in the former disposal area for the facility. The purpose of the cover is to prevent human and ecological exposure to contaminated materials and minimize or eliminate contaminated surface water runoff. The landfill cover consists of 12-inches of soil over the consolidated foundry wastes, overlain by a geotextile fabric and six-inches of stone (NYSDEC 2002).

A visual inspection of the landfill was performed during each visit to the Site to assess the landfill cover for erosion, settlement, ponded water, burrowing rodents, and brush or woody vegetation. As shown in the O&M Checklist (Appendix A), during the April 2015 and the September 2016 visit, wood chips, apparently from the former saw mill operation, were covering the landfill area but did not appear to be impacting the performance of the cover. In addition, during the April 2015 visit, the northern area of the cover contained areas of ponded water; however, the inspection was performed following a significant

snow pack melt. Based on previous site inspections by Arcadis, the ponded areas are not likely to be present during the remainder of the year.

4.3 Concrete Cover

The concrete cover was installed to create a barrier between the surface and the contaminated soils beneath. This reinforced concrete slab is a minimum of 6-inches thick and prevents human and ecological exposure to the underlying contamination. Additionally, it limits surface water from entering the soils.

A visual inspection of the concrete cover was performed during each visit to the Site to inspect the integrity of the remedy. As indicated in the April 2015 and September 2016 O&M Checklist (Appendix A), the concrete cap had minor cracks but did not show evidence of settling or other damage. Cracks in the concrete cover were also noted by NYSDEC in the 2002 Remediation Summary Report, but were found to not affect the performance of the remedy (NYSDEC 2002). In addition, as shown in Appendix A and Appendix B, some debris (primarily wood chips and boards) were present on the concrete cap.

4.4 Cooling Water Pond

The former cooling pond area cover was installed to cover PCB-impacted wastes that were consolidated and placed in the former cooling water pond. The purpose of the cover is to prevent human and ecological exposure to the contaminated materials and minimize or eliminate contaminated surface water runoff. Prior to placement of the waste, the cooling pond was dewatered by discharging the water into a newly constructed pond. The new pond serves as the collection point for surface water runoff from the landfill protective cover, and as the new discharge point for the roof drain of the foundry building. The former cooling water pond cover consists of 12-inches of soil over the consolidated foundry wastes (NYSDEC 2002).

Although there are no specific inspection items for the former cooling water pond area on the O&M checklist, the pond area was inspected for erosion and areas of sparse vegetation. No erosion issues were identified and vegetation along the perimeter of the pond appeared to be well established. In addition, based on a review of photographs from the site, there was no evidence of disturbance or significant settling in the former cooling water pond soil cover.

5 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring is conducted to provide information on groundwater quality, monitor contaminant migration in the groundwater at the site, and assess hydrogeologic site conditions, including groundwater flow direction. Groundwater monitoring well locations are shown on Figure 2-3.

During each Site visit, the integrity of each monitoring well is inspected and the results recorded on a groundwater monitoring well inspection form.

Since the last (2014) PRR Cycle, groundwater monitoring wells were inspected and sampled on the following dates:

- April 23, 2015
- September 13, 2016

The 2016 groundwater monitoring well inspection forms are provided in Appendix D. As indicated in the inspection forms, the monitoring wells were in acceptable condition and no significant problems were reported.

5.1 Water Level Survey

Prior to collecting groundwater samples, water levels were measured to the nearest hundredth of a foot. A summary of the September 2016 data is presented on the groundwater level data forms in Appendix E.

As shown in Appendix E, dense, non-aqueous phase liquid (DNAPL) was observed on the water level probe during the September 2016 monitoring event after measuring the depth to the bottom of groundwater monitoring well MW-1. A photograph showing the DNAPL from MW-1 is also provided in Appendix B. The last detection of DNAPL in this well was during the 2012 groundwater sampling event performed by NYSDEC (NYSDEC, 2012). During the 2012 event, DNAPL was identified on the tip of sample tubing after it was removed from the well. None of the other monitoring wells contained evidence of NAPL during the 2015 or 2016 groundwater monitoring events.

Table 5-1 summarizes the groundwater elevations measured during the 2012, 2013, 2015, and 2016 monitoring events. As shown in Table 5-1, the September 2016 groundwater elevations ranged from 317.14 feet above mean sea level (ft amsl) at MW-6 to 297.79 ft amsl at MW-5. The average groundwater elevation across the site is approximately eight feet lower compared to the previous (April 2015) sampling event. However, as shown in Table 5-1, the September 2016 elevations are comparable to the historic seasonal elevation data. The April 2015 sampling event was the only recent event performed in the spring; therefore, the higher water levels at that time are likely associated with spring recharge. Potentiometric surface maps were prepared from the 2015 and 2016 groundwater elevation data and are presented on Figures 5-1 and 5-2, respectively. As shown on Figures 5-1 and 5-2, the direction of groundwater flow is generally toward the northwest (Arcadis 2017).

5.2 Groundwater Sampling

Groundwater sampling is currently being performed every five quarters in accordance with the SMP. In 2015 and 2016, groundwater samples were collected from seven groundwater monitoring wells (MW-1, MW-2R, MW-3, MW-4, MW-5, MW-6, and MW-7) using low-flow groundwater purging and sampling procedures. The next groundwater sampling event is scheduled for the fourth quarter 2017.

Prior to collecting groundwater samples, pH, conductivity, turbidity, dissolved oxygen (DO), temperature, salinity, total dissolved solids (TDS), and oxidation-reduction potential (REDOX) were measured using a Horiba U-52 water quality meter and recorded on groundwater sampling purge logs.

Groundwater samples were submitted to Spectrum Analytical by chain-of-custody procedures and analyzed for PCBs by United States Environmental Protection Agency (USEPA) Method 8082 in accordance with the SMP. However, because of the spill that was discovered in the storage building near MW-4 in April 2015, the groundwater samples from MW-4 were also analyzed for VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), and Oil and Grease (USEPA Method 3510) during the 2016 monitoring event.

5.3 Groundwater Sampling Results

Historic groundwater monitoring results are summarized in Table 5-2 (PCBs), Table-5-3 (VOCs), and Table 5-4 (SVOCs and Oil/Grease). The 2016 groundwater sample collected from MW-1 contained concentrations of PCB Aroclor 1248 (9.9 P micrograms per liter (ug/L)) that exceeded the corresponding NYSDEC Class GA Standard of 0.09 ug/L. The groundwater sample collected from MW-4 contained concentrations of PCB Aroclor 1248 (0.15 ug/L) that exceeded the corresponding NYSDEC Class GA Standard of 0.09 ug/L. The concentration of PCB Aroclor 1248 in the sample from monitoring well MW-5 exceeded the NYSDEC Class GA Standard of 0.09 ug/L (0.26 PJ ug/L). These values are generally consistent with historical results, except for MW-5. During the last three (2015, 2013, and 2012) sampling events, there were no detections of PCBs in MW-5. Table 5-2 shows that none of the other groundwater samples contained concentrations of PCBs greater than the indicated quantitation limits (Arcadis 2017).

As shown in Table 5-3, the only VOC detections in the 2016 samples from MW-4 were for carbon tetrachloride and chloroform. Carbon tetrachloride had an estimated concentration of 4.8 J ug/L. The chloroform concentration (8.3 ug/L) in the sample from MW-4 exceeded the NYSDEC Class GA Standard of 7.0 ug/L (Arcadis 2017).

Table 5-4 shows that there were no detections of SVOCs or oil and grease in the 2016 samples from MW-4 (Arcadis 2017).

6 OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The landfill and former cooling water pond protective covers do not show indications of significant settling or erosion, are in acceptable condition, and appear to be operating as intended. The yard area concrete cover contains some minor cracks but does not show indications of settlement or other damage. Although wood and/or other debris is present on each of the protective cover areas, it does not appear to be impacting the performance of the cover systems.

The site buildings have been vandalized and the general condition of the buildings is deteriorating.

The spills identified during the 2015 site inspections have subsequently been cleaned and the associated spill incident number closed. Based on the additional analytical data collected to evaluate the spills, no significant spill related impacts to groundwater were observed during the subsequent (September 2016) groundwater monitoring event.

The groundwater samples collected from groundwater monitoring wells MW-1, MW-4, MW-5 contained PCBs at concentrations greater than the respective NYSDEC Class GA Standard. With the exception of MW-5, these wells are located at areas that were known to have contaminated soils from the historical Site operations. None of the other groundwater samples collected from the Site contained detectable concentrations of PCBs.

6.2 Recommendations

Based on the concentrations of PCBs in groundwater, and the detection of DNAPL in monitoring well MW-1, groundwater monitoring should continue in accordance with the SMP to evaluate the impacts to groundwater from the PCB contamination that remains beneath the protective covers (landfill area, former cooling water pond and yard area) and beneath the sawmill building slab.

The inspection checklist for the protective covers in the SMP should be updated to include inspection items for assessment of the new pond and the former cooling water pond soil cover. The new pond should be inspected for areas of erosion and sparse or stressed vegetation, and the former cooling water pond protective cover should be inspected for indications of disturbance or significant settling.

7 SUMMARY AND CERTIFICATION

O&M activities were conducted on April 23rd, 2015 and September 13th, 2016. The landfill, former cooling water pond, and yard area protective covers were inspected and appear to be unchanged and performing as intended. In addition, there is no evidence of a significant change of use at the site that would impair the ability of these controls to comply with the SMP.

The site is not currently active and the buildings are not secure. As a result, vandalism and looting of copper from the buildings and a ground-mounted transformer have occurred.

Two petroleum spill areas identified at the site during the 2015 sampling event have been restored.

Monitoring wells were inspected and are in acceptable condition. Groundwater levels indicate that the direction of groundwater flow across the site is generally toward the northwest

Groundwater samples contained concentrations of PCBs greater than the corresponding NYSDEC Standards at three sampling locations. However, with the exception of MW-5, the detections are in areas where historical contamination was known and migration of the contaminants has not been observed based on available data.

Groundwater monitoring should continue in accordance with the SMP. However, minor changes are recommended to the O&M inspection form in the SMP to include annual assessment of the new pond and former cooling pond protective soil cover.

The completed NYSDEC certification is provided as Appendix F.

8 REFERENCES

NYSDEC 1997. Record of Decision, Oswego Castings Site, Oswego (C), Oswego County. Site Number 7-38-033. March 1997.

NYSDEC 2000. Record of Decision, Oswego Castings Site Operable Unit No. 2 – Yard/Buildings, Oswego, Oswego County. Site Number 7-38-033. March 2001.

NYSDEC 2002. Remediation Summary Report, Oswego Castings Site, City of Oswego, Oswego County, Contract D004283, Site No. 7-38-033. January 2002.

NYSDEC 2012. Photo Report, Oswego Casting Site Sampling, DER Site Management, September 24, 2012.

NYSDEC 2017. Spill Incidents Database Search Details. Spill Number 1500821. June 15, 2017. https://www.dec.ny.gov/cfmx/extapps/derexternal/spills/details.cfm?pageid=2

ARCADIS 2017. Oswego Casting Site 2016 Annual Groundwater Monitoring Report. NYSDEC Site Number 7-38-033, February 2017.

TABLES

Table 5-1
Groundwater Elevation Data
Oswego Castings Site
NYSDEC Site Number 738033

		9/25/2012		10/17/2013		4/23/2015		9/13/2016	
Well	**Measuring Point Elevation**	**Depth to Water**	**Groundwater Elevation**	**Depth to Water**	**Groundwater Elevation**	**Depth to Water**	**Groundwater Elevation**	**Depth to Water**	**Groundwater Elevation**
	Ft amsl	Ft BTOC	Ft amsl	Ft BTOC	Ft amsl	Ft BTOC	Ft amsl	Ft BTOC	Ft amsl
MW-1	313.29	10.85	302.44	5.37	307.92	2.82	310.47	9.65	303.64
MW-2R	313.11	6.67	306.44	3.13	309.98	2.42	310.69	6.32	306.79
MW-3	311.72	10.61	301.11	6.45	305.27	2.43	309.29	9.69	302.03
MW-4	312.45	4.46	307.99	3.80	308.65	3.04	309.41	5.11	307.34
MW-5	312.70	14.91	297.79	9.55	303.15	4.88	307.82	14.91	297.79
MW-6	331.82	14.35	317.47	10.85	320.97	6.82	325.00	14.68	317.14
MW-7	314.11	12.20	301.91	6.54	307.57	2.70	311.41	12.82	301.29

Ft amsl - feet above mean sea level
Ft BTOC - feet below top of casing

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-1 9/25/2012 ug/L	MW-1 10/17/2013 ug/L	MW-1 4/23/2015 ug/L	MW-1 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	**54**	5.0 U	5.0 U	1.0 U
Aroclor-1221	**0.09****	0.17 U	5.0 U	5.0 U	1.0 U
Aroclor-1232	**0.09****	0.17 U	5.0 U	5.0 U	1.0 U
Aroclor-1242	**0.09****	0.17 U	5.0 U	5.0 U	1.0 U
Aroclor-1248	**0.09****	0.17 U	**29**	**120**	**9.9 P**
Aroclor-1254	**0.09****	0.17 U	5.0 U	5.0 U	1.0 U
Aroclor-1260	**0.09****	0.17 U	5.0 U	5.0 U	1.0 U
Aroclor-1262	**0.09****	NA	5.0 U	5.0 U	1.0 U
Aroclor-1268	**0.09****	NA	5.0 U	5.0 U	1.0 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-2R 9/24/2012 ug/L	MW-2R 10/17/2013 ug/L	MW-2R 4/23/2015 ug/L	MW-2R 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1254	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-3 9/24/2012 ug/L	MW-3 10/17/2013 ug/L	MW-3 4/23/2015 ug/L	MW-3 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	**0.13**	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1254	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-4 9/24/2012 ug/L	MW-4 10/17/2013 ug/L	MW-4 4/23/2015 ug/L	MW-4 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	**0.89**	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	**0.56**	**0.15**
Aroclor-1254	**0.09****	0.17 U	0.05 U	**0.13**	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-5 9/25/2012 ug/L	MW-5 10/17/2013 ug/L	MW-5 4/23/2015 ug/L	MW-5 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	0.05 U	**0.26 PJ**
Aroclor-1254	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-6 9/24/2012 ug/L	MW-6 10/17/2013 ug/L	MW-6 4/23/2015 ug/L	MW-6 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1254	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-2
Summary of Groundwater Sampling Results - PCBs

Oswego Casting Site

Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-7 9/25/2012 ug/L	MW-7 10/17/2013 ug/L	MW-7 4/23/2015 ug/L	MW-7 9/13/2016 ug/L
PCBs					
Aroclor-1016	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1221	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1232	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1242	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1248	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1254	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1260	**0.09****	0.17 U	0.05 U	0.05 U	0.05 U
Aroclor-1262	**0.09****	NA	0.05 U	0.05 U	0.05 U
Aroclor-1268	**0.09****	NA	0.05 U	0.05 U	0.05 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

P - Greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses.

** - Sum of these compounds can not exceed 0.09 ug/L.

Table 5-3
Summary of Groundwater Sampling Results - VOCs
Oswego Casting Site
Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-4 9/13/2016 ug/L
VOCs		
1,1,1,2-Tetrachloroethane	5	5.0 U
1,1,1-Trichloroethane	5	5.0 U
1,1,2,2-Tetrachloroethane	5	5.0 U
1,1,2-Trichloroethane	1	5.0 U
1,1-Dichloroethane	5	5.0 U
1,1-Dichloroethene	5	5.0 U
1,1-Dichloropropene	5	5.0 U
1,2,3-Trichloropropane	0.04	5.0 U
1,2,4-Trichlorobenzene	5	5.0 U
1,2,4-Trimethylbenzene	5	5.0 U
1,2-Dibromo-3-Chloropropane	0.04	5.0 U
1,2-Dibromoethane (Ethylene Dibromide)	5	5.0 U
1,2-Dichlorobenzene	3	5.0 U
1,2-Dichloroethane	0.6	5.0 U
1,2-Dichloropropane	1	5.0 U
1,3,5-Trimethylbenzene (Mesitylene)	5	5.0 U
1,3-Dichlorobenzene	3	5.0 U
1,3-Dichloropropane	5	5.0 U
1,4-Dichlorobenzene	3	5.0 U
2,2-Dichloropropane	5	5.0 U
2-Butanone (MEK)	50	5.0 U
2-Chlorotoluene	5	5.0 U
2-Hexanone	50*	5.0 U
4-Chlorotoluene	5	5.0 U
4-Isopropyltoluene	5	5.0 U
4-Methyl-2-pentanone (MIBK)		5.0 U
Acetone	50*	5.0 U
Benzene	1	5.0 U
Bromobenzene	5	5.0 U
Bromochloromethane	5	5.0 U
Bromodichloromethane	50	5.0 U
Bromoform	50*	5.0 U
Bromomethane	5	5.0 U
Carbon disulfide		5.0 U
Carbon tetrachloride	5	4.8 J
Chlorobenzene	5	5.0 U
Chloroethane	5	5.0 U
Chloroform	7	8.3
Chloromethane		5.0 U
cis-1,2-Dichloroethene	5	5.0 U
cis-1,3-Dichloropropene	0.4	5.0 U
Dibromochloromethane	50	5.0 U
Dichlorodifluoromethane	5	5.0 U
Ethylbenzene	5	5.0 U
Iodomethane		5.0 U
Isopropylbenzne (Cumene)	5	5.0 U
n-Butylbenzene	5	5.0 U
n-Propylbenzene	5	5.0 U
m,p-Xylene		5.0 U
Methylene Chloride	5	5.0 U
Methyl Tert Butyl Ether	10	5.0 U
sec-Butylbenzene	5	5.0 U
Styrene	5	5.0 U
o-Xylene		5.0 U
tert-Butylbenzene	5	5.0 U
Tetrachloroethene	5	5.0 U
Toluene	5	5.0 U
trans-1,2-Dichloroethene	5	5.0 U
trans-1,3-Dichloropropene	0.4	5.0 U
Trichloroethene	5	5.0 U
Trichlorofluoromethane	5	5.0 U
Vinyl Acetate		5.0 U
Vinyl Chloride	2	5.0 U
Xylenes, Total		5.0 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

J - Compound detected below the reporting limit or reported concentration is estimated.

Table 5-4
Summary of Groundwater Sampling Results - SVOCs / Oil and Grease
Oswego Casting Site
Site Number 7-38-033

Sample ID Sampling Date Units	NYSDEC Class GA Standards ug/L	MW-4 9/13/2016 ug/L
SVOCs		
1,2,4-Trichlorobenzene		10 U
1,2-Dichlorobenzene		10 U
1,3-Dichlorobenzene		10 U
1,4-Dichlorobenzene		10 U
2,2-oxybis(1-Chloropropane)		10 U
2,4,5-Trichlorophenol	**1**	20 U
2,4,6-Trichlorophenol	**1**	10 U
2,4-Dichlorophenol	**5**	10 U
2,4-Dimethylphenol	**50***	10 U
2,4-Dinitrophenol	**10***	20 U
2,4-Dinitrotoluene	**5**	10 U
2,6-Dinitrotoluene	**5**	10 U
2-Chloronaphthalene	**10***	10 U
2-Chlorophenol		10 U
2-Methylnaphthalene		10 U
2-Methylphenol		10 U
2-Nitroaniline	**5**	20 U
2-Nitrophenol		10 U
3,3-Dichlorobenzidine	**5**	10 U
3-Nitroaniline	**5**	20 U
4,6-Dinitro-2-methylphenol		20 U
4-Bromophenyl-phenylether		10 U
4-Chloro-3-methylphenol		10 U
4-Chloroaniline	**5**	10 U
4-Chlorophenyl-phenylether		10 U
4-Methylphenol		10 U
4-Nitroaniline	**5**	20 U
4-Nitrophenol		20 U
Acenaphthene		10 U
Acenaphthylene		10 U
Anthracene	**50***	10 U
Benzo(a)anthracene	**0.002***	10 U
Benzo(a)pyrene	**ND**	10 U
Benzo(b)fluoranthene	**0.002***	10 U
Benzo(g,h,i)perylene		10 U
Benzo(k)fluoranthene	**0.002***	10 U
bis(2-Chloroethoxy)methane	**5**	10 U
bis(2-Chloroethyl)ether	**1**	10 U
bis(2-Ethylhexyl)phthalate	**5**	10 U
Butylbenzylphthalate	**50***	10 U
Carbazole		10 U
Chrysene	**0.002***	10 U
Dibenz(a,h)anthracene		10 U
Dibenzofuran		10 U
Diethylphthalate	**50***	10 U
Dimethylphthalate	**50***	10 U
Di-n-butylphthalate	**50**	10 U
Di-n-octyl phthalate	**50***	10 U
Fluoranthene	**50***	10 U
Fluorene	**50***	10 U
Hexachlorobenzene	**0.04**	10 U
Hexachlorobutadiene	**0.5**	10 U
Hexachlorocyclopentadiene	**5**	10 U
Hexachloroethane	**5**	10 U
Indeno(1,2,3-cd)pyrene	**0.002***	10 U
Isophorone	**50***	10 U
Naphthalene	**10***	10 U
Nitrobenzene	**0.4**	10 U
N-Nitroso-di-n-propylamine		10 U
N-Nitrosodiphenylamine	**50***	10 U
Pentachlorophenol	**1**	20 U
Phenanthrene	**50**	10 U
Phenol	**1**	10 U
Oil and Grease (mg/L)		0.99 U

Notes:

- Concentration exceeds NYSDEC Class GA Standard.

U - Compound was not detected at the indicated concentration.

FIGURES

ARCADIS

Figure 2-1
Site Location
Oswego Castings Site
Oswego, New York
NYSDEC Site 7-38-033

0 2,000 ft

Source: USGS 7.5-minute Series Topographic Quadrangle, Oswego East

0 150 300 600 900 1,200 Feet

N

Legend

- Monitoring Well
- Approximate Site Boundary
- OU-1
- OU-2
- IRM Area (1997 ROD)
- IRM Area (2000 ROD)

Note: Remedial area boundaries are approximate.

New York State Department of Environmental Conservation
Site Number 738033
Oswego Castings, Oswego, New York

SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE **2-2**

G:\GIS\MXD\00266404.0000\SITEMAP.mxd
G:\PROJECT\00266404.0000\PRR\2017 PRR\Figure 2-2 - Site Map.pdf

0 100 200 400 600 800 Feet

N

Legend

- Monitoring Well

New York State Department of Environmental Conservation
Site Number 738033
Oswego Castings, Oswego, New York

MONITORING WELL LOCATIONS

ARCADIS

FIGURE
2-3

G:\GIS\MOD\00266404.0000\WELLS.mxd
G:\PROJECT\00266404.0000\Reports\Figure 4-1 Wells.pdf

Figure 4-1
Spill Locations

Oswego Casting Site
Oswego, New York
NYSDEC Site Number 7-38-033

G:\PROJECT\00266404.0000\PRR\PRR2017\Figure 4-1.pptx

MW-7
311.41

MW-5
307.82

MW-3
309.29

310'

315'

320'

MW-4
309.41

325'

MW-6
325.00

325'

320'

310'

MW-2R
310.69

315'

MW-1
310.47

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Monitoring Well
- Approximate Site Boundary
- Potentiometric Contour (Feet Above Mean Sea Level)
- 297.79 Groundwater Elevation (Feet Above Mean Sea Level)

0 150 300 600 900 1,200 Feet

N

New York State Department of Environmental Conservation
Site Number 738033
Oswego Castings, Oswego, New York

GROUNDWATER POTENTIOMETRIC MAP
April 23, 2015

ARCADIS

FIGURE
5-1

G:\GISMOD\00266404.0000\POTMAP_oct2013.mxd
G:\PROJECT\00266404.0000\Reports\PRR\Figure 5-2.pdf

Legend

- Monitoring Well
- Approximate Site Boundary
- Potentiometric Contour (Feet Above Mean Sea Level)
- 297.79 Groundwater Elevation (Feet Above Mean Sea Level)

0 150 300 600 900 1,200 Feet

N

New York State Department of Environmental Conservation
Site Number 738033
Oswego Castings, Oswego, New York

GROUNDWATER POTENTIOMETRIC MAP
September 13, 2016

ARCADIS

FIGURE
5-2

G:\GIS\MOD\00266404.0000\POTMAP_Sept2016.mxd

APPENDIX A

O&M Checklists

OSWEGO CASTINGS SITE

Landfill and Concrete Cap Operation and Maintenance Checklist

Inspected by: Jeremy Wyckoff

Date: 4/23/2015 Time: 11:00

Weather Conditions: Overcast. 40 degrees F.

LANDFILL COVER SYSTEM

Erosion		YES	X	NO
Cap Settlement		YES	X	NO
Ponded Water or Wet Areas	X	YES		NO
Burrowing Rodents		YES	X	NO
Brush or Other Woody Vegetation		YES	X	NO

Comments: Wood chips and wood debris across cover.

Wet/ponded areas near northern area of cover - recent substantial snow melt.

CONCRETE COVER

Cracked Concrete	X	YES		NO
Damaged Concrete		YES	X	NO
Concrete Settlement		YES	X	NO
Ponded Water or Wet Areas		YES	X	NO
Presence of Vegetation		YES	X	NO

Comments: Wood and other debris across concrete cap.

Note: Pond area inspected. no visible erosion. Vegetation well established along perimeter.

INSPECTOR'S SIGNATURE JRW DATE 4/23/2015

OSWEGO CASTINGS SITE

Landfill and Concrete Cap Operation and Maintenance Checklist

Inspected by: Bree Quaglieri

Date: 9/13/2016 Time: 11:10

Weather Conditions: Partly cloudy, 76°F

LANDFILL COVER SYSTEM

Erosion		YES	X	NO
Cap Settlement		YES	X	NO
Ponded Water or Wet Areas	X	YES		NO
Burrowing Rodents		YES	X	NO
Brush or Other Woody Vegetation	X	YES		NO

Comments: Wood debris across cover.

Heavy vegitation along perimeter and at wells MW-3, MW-5, MW-6, and MW-7.

CONCRETE COVER

Cracked Concrete	X	YES		NO
Damaged Concrete		YES	X	NO
Concrete Settlement		YES	X	NO
Ponded Water or Wet Areas		YES	X	NO
Presence of Vegetation		YES	X	NO

Comments: Wood and other debris across concrete cap.

Note: Pond area inspected. no visible erosion.

INSPECTOR'S SIGNATURE BRQ DATE 9/13/2016

APPENDIX B

Site Photographs – 2016

Appendix C
Site Photographs

Oswego Castings Site
NYSDEC Site #7-38-033
Oswego, New York

Site facing east

Site facing southeast near MW-5

Concrete cap in Yard Area, facing east

Concrete cap in Yard Area, facing northwest

Concrete cap in Yard Area, facing northeast

Southern edge of Landfill Area - facing northwest

Landfill Area – facing north

Northern Landfill Area – facing southeast

MW-1 (left)

DNAPL from MW-1 on water level probe (right)

MW-2R

MW-3

MW-4

MW-5

MW-6

MW-7

APPENDIX C

NYSDEC Spill Database Record

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Spill Incidents Database Search Details

Spill Record

Administrative Information

DEC Region: 7
Spill Number: 1500821

Spill Date/Time

Spill Date: 04/23/2015 **Spill Time:** 11:30:00 AM
Call Received Date: 04/23/2015 **Call Received Time:** 01:07:00 PM

Location

Spill Name: EXISTING DEC SITE
Address: 375 MITCHELL ST
City: OSWEGO **County:** Oswego

Spill Description

Material Spilled	Amount Spilled	Resource Affected
unknown material	UNKNOWN	Unknown

Cause: Equipment Failure
Source: Commercial/Industrial
Waterbody:

Record Close

Date Spill Closed: 10/22/2015

"Date Spill Closed" means the date the spill case was closed by the case manager in the Department of Environmental Conservation (the Department). The spill case was closed because either; a) the records and data submitted indicate that the necessary cleanup and removal actions have been completed and no further remedial activities are necessary, or b) the case was closed for administrative reasons (e.g., multiple reports of a single spill consolidated into a single spill number). The Department however reserves the right to require additional remedial work in relation to the spill, if in the future it determines that further action is necessary.

If you have questions about this reported incident, please contact the Regional Office where the incident occurred.

Refine This Search

APPENDIX D

Well Inspection Forms

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/ 13 /16
Inspector: B. Quaglieri
Well designation: MW-1
Well location: South of main building

OUTWARD APPERANCE

Flushmount diameter	____ inches	N/A [X]	
Approximate stickup height	~3 feet	N/A [ ]	
Integrity of protective casing	Describe: good, intact		
Protective casing material	Describe: Steel		
Protective casing width or diameter	6 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: good		
Surface drainage	Away from well head [X]	Toward well head [ ]	
Bollards present?	Yes [ ]	No [X]	Describe:
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe:
Photograph taken?	Yes [X]	No [ ]	Describe:

INNER APPERANCE

Integrity of well casing	Describe: good, intact			
Integrity of cap seal	Describe: good			
Surface water in casing?	Yes [ ]	No [X]	Describe:	
Well casing diameter	4 inches			
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]	
Inner cap	Threaded [ ]	Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point				
Evidence of double casing?	Yes [ ]	No [X]	Describe:	

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe:
PID Reading	0.0 ppm		
Depth to water	9.65 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	17.41 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe:		

Additional comments:

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GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/ 13 /16
Inspector: B. Quaglieri
Well designation: MW-2R
Well location: South of main building

OUTWARD APPERANCE

Flushmount diameter	____ inches	N/A [X]	
Approximate stickup height	~2 feet	N/A [ ]	
Integrity of protective casing	Describe: good, intact		
Protective casing material	Describe: ~~Steel~~		
Protective casing width or diameter	4 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: fair		
Surface drainage	Away from well head [X]		Toward well head [ ]
Bollards present?	Yes [ ]	No [X]	Describe:
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe:
Photograph taken?	Yes [X]	No [ ]	Describe:

INNER APPERANCE

Integrity of well casing	Describe: good, intact		
Integrity of cap seal	Describe: good		
Surface water in casing?	Yes [ ]	No [X]	Describe:
Well casing diameter	2 inches		
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]
Inner cap	Threaded [ ] Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point			
Evidence of double casing?	Yes [ ]	No [X]	Describe:

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe:
PID Reading	0.0 ppm		
Depth to water	6.32 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	15.77 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe:		

Additional comments:

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/ 13 /16
Inspector: B. Quaglieri
Well designation: MW-3
Well location: East side of site

OUTWARD APPERANCE

Flushmount diameter	_____ inches	N/A [X]	
Approximate stickup height	~2 feet	N/A [ ]	
Integrity of protective casing	Describe: good, intact		
Protective casing material	Describe: Steel		
Protective casing width or diameter	6 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: good		
Surface drainage	Away from well head [X]		Toward well head [ ]
Bollards present?	Yes [ ]	No [X]	Describe:
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe:
Photograph taken?	Yes [X]	No [ ]	Describe:

INNER APPERANCE

Integrity of well casing	Describe: good + intact		
Integrity of cap seal	Describe: good		
Surface water in casing?	Yes [ ]	No [X]	Describe:
Well casing diameter	4 inches		
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]
Inner cap	Threaded [ ] Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point			
Evidence of double casing?	Yes [ ]	No [X]	Describe:

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe:
PID Reading	0.0 ppm		
Depth to water	9.69 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	17.31 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe:		

Additional comments:

ARCADIS

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/13/16
Inspector: B. Quaglieri
Well designation: MW-4
Well location: Central area of site

OUTWARD APPERANCE

Flushmount diameter	_____ inches	N/A [X]	
Approximate stickup height	~2 feet	N/A [ ]	
Integrity of protective casing	Describe: good, intact		
Protective casing material	Describe: steel		
Protective casing width or diameter	6 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: good		
Surface drainage	Away from well head [ ]	Toward well head [ ]	
Bollards present?	Yes [X]	No [ ]	Describe:
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe:
Photograph taken?	Yes [X]	No [ ]	Describe:

INNER APPERANCE

Integrity of well casing	Describe: good, intact			
Integrity of cap seal	Describe: good			
Surface water in casing?	Yes [ ]	No [X]	Describe:	
Well casing diameter	4 inches			
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]	
Inner cap	Threaded [ ]	Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point				
Evidence of double casing?	Yes [ ]	No [X]	Describe:	

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe:
PID Reading	0.0 ppm		
Depth to water	5.11 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	16.42 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe:		

Additional comments:

ARCADIS

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/13/16
Inspector: B. Quaglieri
Well designation: MW-5
Well location: NW area of site

OUTWARD APPERANCE

Flushmount diameter	_____ inches	N/A [X]	
Approximate stickup height	~3.5 feet	N/A [ ]	
Integrity of protective casing	Describe: good + intact		
Protective casing material	Describe: Steel		
Protective casing width or diameter	4 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: fair		
Surface drainage	Away from well head [X]	Toward well head [ ]	
Bollards present?	Yes [ ]	No [X]	Describe: _____
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe: _____
Photograph taken?	Yes [X]	No [ ]	Describe: _____

INNER APPERANCE

Integrity of well casing	Describe: good + intact			
Integrity of cap seal	Describe: good			
Surface water in casing?	Yes [ ]	No [X]	Describe: _____	
Well casing diameter	2 inches			
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]	
Inner cap	Threaded [ ]	Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point				
Evidence of double casing?	Yes [ ]	No [X]	Describe: _____	

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe: _____
PID Reading	0.0 ppm		
Depth to water	14.91 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	16.88 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe: _____		

Additional comments:

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/13/16
Inspector: B. Quaglieri
Well designation: MW-6
Well location: East side of site

OUTWARD APPERANCE

Flushmount diameter	____ inches	N/A [X]	
Approximate stickup height	~2 feet	N/A [ ]	
Integrity of protective casing	Describe: good + intact		
Protective casing material	Describe: Steel		
Protective casing width or diameter	4 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: good		
Surface drainage	Away from well head [ ]		Toward well head [ ]
Bollards present?	Yes [ ]	No [X]	Describe:
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe:
Photograph taken?	Yes [X]	No [ ]	Describe:

INNER APPERANCE

Integrity of well casing	Describe: good & intact		
Integrity of cap seal	Describe: good		
Surface water in casing?	Yes [X]	No [X]	Describe:
Well casing diameter	2 inches		
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]
Inner cap	Threaded [ ] Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point			
Evidence of double casing?	Yes [ ]	No [X]	Describe:

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe:
PID Reading	6.0 ppm		
Depth to water	14.68 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	36.77 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe:		

Additional comments:

ARCADIS

GROUNDWATER MONITORING WELL INSPECTION

Site/Project Name: Oswego Castings
Project number: 00266404.0000
Date of inspection: 9/ 13 /16
Inspector: B. Quaglieri
Well designation: MW-7
Well location: North Side of site

OUTWARD APPERANCE

Flushmount diameter	_____ inches	N/A [X]	
Approximate stickup height	~3 feet	N/A [ ]	
Integrity of protective casing	Describe: good + intact		
Protective casing material	Describe: steel		
Protective casing width or diameter	4 inches		
Weep hole in protective casing	Yes [ ]	No [X]	
Surface seal/Apron material	Cement [X]	Bentonite [ ]	Not apparent [ ]
Integrity of surface seal/apron	Describe: good		
Surface drainage	Away from well head [ ]		Toward well head [X]
Bollards present?	Yes [ ]	No [X]	Describe: _____
Well ID visible?	Yes [X]	No [ ]	Describe: on casing
Lock present and functional?	Yes [X]	No [ ]	Describe: _____
Photograph taken?	Yes [X]	No [ ]	Describe: _____

INNER APPERANCE

Integrity of well casing	Describe: good, intact			
Integrity of cap seal	Describe: good			
Surface water in casing?	Yes [ ]	No [X]	Describe: _____	
Well casing diameter	2 inches			
Well casing material	PVC [X]	Steel [ ]	Stainless steel [ ]	
Inner cap	Threaded [ ]	Slip [ ]	Expansion cap [X]	None [ ]
Reference/Measuring point				
Evidence of double casing?	Yes [ ]	No [X]	Describe: _____	

DOWNHOLE

Odor	Yes [ ]	No [X]	Describe: _____
PID Reading	0.0 ppm		
Depth to water	12.82 feet (nearest 0.01)		
Depth to LNAPL	------ feet (nearest 0.01)		
Total well depth	16.09 feet (nearest 0.01)		
Sediment (hard/soft bottom)	Describe: _____		

Additional comments:

APPENDIX E

Water Level Data Form – 2016

GROUNDWATER LEVEL DATA FORM

PROJECT NAME: Oswego Castings
PROJECT NUMBER: 00266404.0000
DATE: 9/13/2016
NAME: BRQ

WELL ID	Date	Time	Headspace VOCs (ppm)	Depth to Water (feet)	Total Depth (feet)	Reference Point
MW-1	9/13/2016		0.0	9.65	17.41	TOC
MW-2R	9/13/2016		0.0	6.32	15.77	TOC
MW-3	9/13/2016		0.0	9.69	17.31	TOC
MW-4	9/13/2016		0.0	5.11	16.42	TOC
MW-5	9/13/2016		0.0	14.91	16.88	TOC
MW-6	9/13/2016		0.0	14.68	36.77	TOC
MW-7	9/13/2016		0.0	12.82	16.09	TOC

Notes: NM - Not measured

DNAPL noted on the water level probe when measuring DTB at MW-1.

APPENDIX F

IC/EC Certification Form

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. **738033**

Site Name Oswego Castings

Site Address: Mitchell Street Zip Code: 13126
City/Town: Oswego
County: Oswego
Site Acreage: 10.0

Reporting Period: December 31, 2013 to December 31, 2016

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	☐
7. Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

SITE NO. 738033 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
111.69-01-01.000	City of Oswego	O&M Plan
		O&M Plan Monitoring Plan Ground Water Use Restriction Landuse Restriction

An Environmental Notice was placed on the site May 22, 2012. There is a O and M plan with a monitoring plan currently in place at the site. A SMP is currently being developed for the site.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
111.69-01-01.000	Cover System

There is a concrete cover at the site as well as a Soil cover. There is also a monitoring well network.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification, including data and material prepared by previous contractors for the current certifying period, if any;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

_____ _____

Signature of Standby Consultant/Contractor Date

Box 6

IC/EC CERTIFICATIONS

Professional Engineer Signature

I certify that all information in Boxes 2 through 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

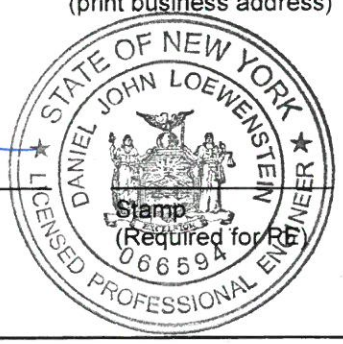
I, DANIEL J LOEWENSTEIN (print name) at ARCADIS

855 ROUTE 146

CLIFTON PARK, N.Y 12065

(print business address)

am certifying as a Professional Engineer.



Signature of Professional Engineer

6/20/17

Date

Arcadis CE, Inc.

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