



April 10, 2026

To: Benjamin McPherson (NYSDEC)

From: John Black, P.E (Inventum)

CC: John Yensan (OSC); Al Trpevski (OSC); Dan Flanigan (OSC); James Edwards (Inventum)

RE: Valve Pit Assessment and Materials Management
Interim Remedial Measures Work Plan
3821 River Road, Inc.
Brownfield Cleanup Program Site No. C915003
3821 River Road
Town of Tonawanda, New York

Inventum Engineering, P.C. (Inventum), on behalf of 3821 River Road, Inc. (3821 River Road), has prepared this Valve Pit Assessment and Materials Management Interim Remedial Measures Work Plan (Valve Pit Assessment IRM Work Plan) for the valve pit immediately north west of the former tank farm on the 3821 River Road Brownfield Cleanup Program (BCP) Site (#C915003) located at 3821 River Road, Town of Tonawanda, New York (BCP Site). The concrete valve pit that is addressed in this work plan is located off the northwest corner of the former tank secondary containment which was located in the northern center portion of the BCP Site and north of the former facility operations. An aerial photograph of the BCP Site showing the location of the valve pit is attached as Figure 1 to this work plan. The aboveground storage tanks shown on Figure 1 have been decommissioned and removed from the site in accordance with the approved Aboveground Storage Tank Management IRM Work Plan (November 2024).

This Valve Pit Assessment and Materials Management IRM Work Plan defines the steps to remove and manage the collected water and “sediment” material from within the valve pit, to assess the valve pit for cracks or penetrations through the concrete, and to collect soil samples to assess the soils beneath or around the valve box in order to determine if mercury is present in the soil if cracks or penetrations are present in the concrete. Full removal of the concrete valve pit structure and pipes within the valve pit are not addressed within the scope of this work plan.

Purpose

The 3821 River Road BCP Site was originally developed by Allied Fibers and Plastics Company (Allied¹) in the early 1950s and was operated as a research and manufacturing facility through 1982. Site operations by Allied reportedly included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C Polyethylene and Co-polymers), which was finished into powder, pelleted and solid forms. Allied sold the property to Rouse Breihan, Inc. in 1985 following the shutdown of all chemical processing activities. The Laboratory Building continued to be used to conduct laboratory testing for the neighboring Tonawanda Coke Corporation (TCC) facility between 1985 and 2018. All operations shut

¹ AlliedSignal acquired Honeywell International, Inc. in 1999 but the merged entity retained the Honeywell name.

down in 2018. 3821 River Road purchased the Site from Rouse Breihan Inc. on August 2, 2022.

After the Allied facility operation and TCC facility shutdown, the valve pit was not decommissioned, and the valve pit was filled with water when 3821 River Road took possession of the property. The valve pit is a subgrade concrete vault construction, and the dimensions are approximately 11-feet by 8.5-feet at the ground surface and the total depth is estimated at 8-feet. The valve pit is aligned with the longer side to the east and west and a steel access ladder is installed to the east side of the valve pit. The main pipe in the valve pit runs north to south and is an approximately 20-inch diameter cast iron pipe with an iron gate valve equipped with a handwheel to control the flow within the pipe. There are two additional pipe penetrations that are visible which are approximately 2-inches in diameter and enter the east and south sidewalls of the valve pit. The 2-inch pipes are disconnected and the historical uses of these pipes are unknown. No tar or non-aqueous phase liquid has been observed in the valve pit, but microbeads of suspected mercury are present.

A historical figure produced for Semet Solvay Engineering Division, Allied Chemical Dye Corporation, Underground Piping, Sheet No: 2, 60054 dated August 15, 1953 (Figure 60054) was recovered on the former TCC facility and reviewed to determine the historical use of the valve pit. Figure 60054 indicates the 20-inch cast iron pipe enters the valve pit from the north, exits the valve pit through a meter, and was used to convey mill water to the former facility. It is also shown on Figure 60054 that the 20-inch cast iron pipe conveyed river water flow from a 30-inch cast iron pipe that runs from along the northern property line. A historical figure produced for Semet Solvay Engineering Division, Allied Chemical Dye Corporation, Sewer, Water, and Gas Lines, 58986 dated August 7, 1952 (Figure 58986) shows the mentioned 30-inch cast iron is routed under River Road through the River Road tunnel and continues to the Pump House located on 3800 River Road (Site 108, Operable Unit 03, #915055). Based on review of the historical figures, it is likely that the Mill Water was raw water extracted from the Niagara River which was used as part of the former facility's manufacturing process. Based on observations in the River Road Tunnel, it is likely that the 30-inch pipe is buried outside the tunnel as there was no pipe of that size observed in the tunnel during asbestos abatement activities completed in 2021. The referenced Figures 60054 and 58986 are provided in Appendix B.

Collecting a water sample from the valve pit and a solid sample of the "sediment" beneath the water was included as part of the scope in the Remedial Investigation Workplan (August 2023) (RIWP) that was approved by the New York State Department of Environmental Conservation (NYSDEC).

On October 12, 2023, the solid sample was collected as a grab sample from the upper few inches of the accumulated "sediment" in the valve pit and analyzed for:

- Volatile Organic Compounds (VOCs) (Method 8260C)
- Semi-Volatile Organic Compounds (SVOCs) (Method 8270D)
- Cyanide (Method 9012)
- Mercury (Method 7471B)
- Metals (Method 6010C)
- Hexavalent Chromium (7196A)

The sample results detected mercury at 8.4 milligrams per kilogram (mg/kg). The sample results being compared to the Commercial Soil Cleanup Objectives (SCO) for reference. At the time of sample collection,



no silver metallic “beads” were observed in the sampled material. The sample results are summarized in Table 1.

The water sample from the valve pit was collected as grab sample on October 12, 2023, and analyzed for:

- VOCs (Method Priority Pollutants 624.1);
- SVOCs (Method Priority Pollutants 625.1)
- Cyanide (Method 335.4)
- Mercury (Method 1631E)
- Metals (Method 200.7)

The sample results indicated exceedances for the metals mercury (27,600 nanograms per liter [ng/l]), arsenic (0.034 milligrams per liter [mg/L]), cadmium (0.22 mg/L), total chromium (0.07 mg/L), copper (0.51 mg/L), lead (0.71 mg/L), nickel (0.13 mg/L) and selenium (0.016 mg/L) with sample results being compared to the Class GA NYS Ambient Water Quality Standards and Guidance Values (Class GA Standards). The sample results are presented and summarized in the attached Table 2.

Upon review of the analytical and field data collected during the RI, a Supplemental RIWP was submitted to the NYSDEC for review and was approved in March 2025. The goal of the Supplemental RIWP was to address data gaps that were observed during the initial RI and one of the identified data gaps was the source of the mercury that was detected in the “sediment” within the valve pit. To investigate this data gap, the scope of the Supplemental RI includes resampling the water that has collected in the valve pit. The second water sample was collected as grab sample on April 23, 2025, and analyzed for:

- VOCs (Method Priority Pollutants 624.1);
- SVOCs (Method Priority Pollutants 625.1)
- Cyanide (Method 335.4)
- Mercury (Method 1631E)
- Metals (Method 200.7)

The sample results indicated no exceedances of the Class GA Standards for metals or other parameters. No dewatering activities had been conducted of the valve pit water in the time between the water sample was collected in 2023 to when the sample was collected in April 2025. The sample results are summarized in the attached Table 2.

The scope of the Supplemental RI also involves removing the sediment or solids from the valve pit, containerizing the remove solids, and sampling for disposal parameters. Also, after the valve pit is empty, the concrete sidewalls and base will be assessed for visual evidence of cracks. If cracks are observed, additional soil samples to assess the soils beneath or around the valve box are proposed to determine if mercury is present in the soil beneath or around the valve pit.

The valve pit was dewatered November 20, 2025, through November 21, 2025. The water removed from the valve pit was placed in 275-gallon totes for storage. After the water was removed from the valve pit, OSC mobilized to remove the sediment from within the valve pit. During preparations for removal, silver metallic “beads” estimated to be a few millimeters in diameter were observed in the sediment. Work to remove the sediment from the valve pit was stopped due to the concern that these beads could be elemental mercury droplets (i.e. mercury beads). Mercury beads have the potential to release colorless and odorless mercury vapor. This work plan was developed to ensure the proper personnel protection equipment (PPE) and vapor monitoring equipment is utilized during all materials management from the valve pit and during inspection and sampling.



The following photographs are provided to show the valve pit and observed conditions.



Photograph 1: View from the ground surface look into the valve pit after dewatering was completed. The access ladder is located on the eastern side of the structure.



Photograph 2: An up-close view of the suspect elemental mercury beads within the sediment of the valve pit.



Valve Pit Clean-out and Assessment

Water has once again accumulated in the valve pit. The water will be pumped into 275-gallon poly totes for temporary storage. Care will be taken to minimize the removal of solids when dewatering the valve pit.

Once the valve pit is dewatered, the following steps will be implemented to remove the sediment and access the interior of the valve pit.

1. Draft waste profiles will be generated with the selected waste management company and coordination of the schedule with the waste transporter and disposal company will be in place to minimize the time the mercury containing waste is stored onsite.
2. The applicable health and safety plan documents will be reviewed with all onsite personnel, and a Jerome J405 Mercury Vapor Analyzer (Jerome meter) will be available, calibrated, and in operation before the work begins. The Site-Specific Health and Safety Plan (HASP), the Mercury Work Addendum to the HASP (HASP Addendum), and the Activity Hazard Analysis (AHA) are attached in Appendix A. The PPE requirements to conduct valve pit cleanout are outlined in the HASP Addendum. The air monitoring requirements to the conduct the work are included in the HASP Addendum and consist of:
 - a. The Jerome meter will be utilized to monitor breathing zones in areas where mercury vapor is anticipated. Monitoring with the Jerome meter will continue through all phases of work within the mercury work area. If levels of mercury vapor are detected at readings over 0.025 milligrams per cubic meter (mg/m^3) for a period of 5 minutes, then operations will temporarily stop. During the temporary stoppage monitoring with the Jerome meter will take place for an additional 5 minutes, if levels fall below $0.025 \text{ mg}/\text{m}^3$ during that time, work will resume with ongoing monitoring in place. Should detection of mercury vapor continue to be above $0.25 \text{ mg}/\text{m}^3$, the work process and/or upgrading of PPE to level C shall be re-evaluated.
 - b. Observed mercury vapor readings will be routinely recorded during entirety of the field work.
3. Absorbent pads, a spill kit and a fire extinguisher will be staged near the work area.
4. Perimeter air monitoring stations will be in operation in accordance with the 3821 River Road Community Air Monitoring Plan (CAMP).
5. Polyethylene sheeting will be placed on the ground in the area where sediment removal will take place to prevent the removed sediment from contacting the ground.
6. The sediment will be vacuumed out of the valve pit using a mechanical vacuum and light washing with water will be used to loosen any sediment that is adhered to the concrete. If needed, OSC personnel will enter the valve pit with proper PPE as outlined in the HASP Addendum to remove any remaining sediment by using hand tools.
7. All sediment and wash water will be directly transferred to Department of Transportation (DOT) open top 55-gallon drums. The waste will be managed as D009 mercury containing hazardous waste.
 - a. To complete the waste profile, Momentum Environmental (formerly Environmental Servies Group) has requested the drummed sediment be analyzed for the following analytical parameters to finalize the waste disposal profile. The sample will be collected directly from the drummed material:



- i. VOCs (Method 8260C)
 - ii. SVOCs (Method 8270D)
 - iii. Polychlorinated Biphenyls (PCBs) (Method 8082A)
 - iv. RCRA Metals (Method 6010C)
 - v. Toxicity Characteristic Leaching Procedure (TCLP) for VOCs, SVOCs, PCBs, and RCRA Metals
 - b. The laboratory that supports the project has explained that if an elemental mercury “bead” is not directly in the portion of the sample used to conduct the TCLP leaching test that the sample may still “pass” TCLP. There is also the concern that elemental mercury is not very leachable under the TCLP test due to the mild acidic conditions that are used for the TCLP analysis. However, as outlined in 7a of this section, TCLP RCRA metals will be analyzed to adequately complete the waste profile.
8. The containerized D009 waste will be stored in the hazardous waste accumulation area while pending offsite disposal. Waste labels will be compliant with the Environmental Protection Agency (EPA) regulations and the DOT requirements found in 49 CFR 172.400 (subpart E).
9. The equipment (e.g. metal hand towels, vacuum equipment, excavator bucket) used for clean-out of the valve pit will be decontaminated and all decontamination water will be containerized.
10. Once the valve pit has been emptied, the sidewalls and base of the concrete structure will be inspected for cracks.
 - a. If cracks are observed in the base of the structure, the concrete will be cored and soil samples will be collected beneath the concrete.
 - b. If cracks are observed in the sidewall of the concrete structure, a test pit will be excavated alongside the concrete to the location of the crack and a soil sample will be collected at the same elevation of the observed crack.
 - c. Observed soil conditions at the time of sampling will be documented as outlined in the test pitting producers of the RIWP and any collected soil samples will be analyzed for:
 - i. TCL VOCs (Method 8260C)
 - ii. TCL SVOCs (Method 8270D)
 - iii. PCBs (Method 8082A)
 - iv. Cyanide (Method 9012)
 - v. Mercury (Method 7471B)
 - vi. Metals (Method 6010C)
 - vii. Hexavalent Chromium (7196A)

Dust Control

Dust control and air monitoring are important components of this work plan. The main sources of potential dust generation during this phase of the project would include test pit excavation and truck traffic. The material within the valve pit will be saturated with water which will mitigate dust generation during the sediment removal. The CAMP (included in the RIWP) addresses the air monitoring requirements for the 3821 River Road BCP Site and techniques to effectively control dust generation and migration. In addition to the CAMP air monitoring, mercury vapor monitoring using the Jerome meter will be implemented at the work area in accordance with the HASP Addendum.



Waste Management

The NYSDEC will be notified no less than 5-days before any waste is transported offsite for disposal which would include drummed materials removed from the valve pit, PPE (e.g. disposal coverall and gloves), used polyethylene sheeting, containerized water removed from the valve pit or water generated from decontamination of equipment. Additionally, NYSDEC will be notified no less than 5-days in advance of discharge of the generated water to the Town of Tonawanda Publicly Owned Treatment Works (POTW) under the existing permit.

The removed solids from the valve pit will be containerized in DOT approved 55-gallon drums and managed as D009 hazardous waste. Used polyethylene sheeting and PPE will also be drummed and managed as D009 hazardous waste. The drummed D009 waste is currently scheduled to be managed and transported offsite by Momentum Environmental and transported to Veolia ES Technical Solutions, LLC located at One Eden Lane, Flanders, New Jersey 07836 (USEPA ID No. NJD980536593) for final transfer to Veolia ES Technical Solutions, L.L.C. Wisconsin (WI) location at 1275 Mineral Springs Drive, Port Washington, WI 53074 (USEPA ID No. WID988566543) for final disposal. The waste profile will be completed using the available sediment analytical data and visual observation of the elemental mercury. NYSDEC will be notified no less than 5-days in advance if the proposed transporter or disposal facility changes.

The available analytical data for the containerized water will be presented to the POTW for approval to discharge under the existing permit and any additional analytical analysis will be collected at the request of the POTW to obtain discharge approval. If the generated water is not approved for POTW discharge, the water will be profiled, and a disposal facility will be selected.

The generated waste will be tracked under the site waste log which will include the waste type, source of generation, waste classification, volume, and disposal facility.

Schedule

3821 River Road is ready to complete the work outline in this Valve Pit Assessment IRM Work Plan during the spring of 2026.

Notifications

The DEC will be notified no less than 5 days before the following activities under this Valve Pit Assessment IRM Work Plan:

1. Start of work
2. Shipping a new material waste stream offsite for disposal; and
3. Discharge of generated water to the POTW.

Reporting

The sampling and waste trackers will be maintained throughout the scope of work within this work plan. Waste trackers and sampling updates will be provided in the monthly report for the 3821 River Road BCP Site which will be submitted by the 10th day of each trailing month.



A Construction Completion Report (CCR) shall be completed and prepared in accordance with the New York State BCP and DER-10 for work completed under this Valve Pit Assessment IRM Work Plan.

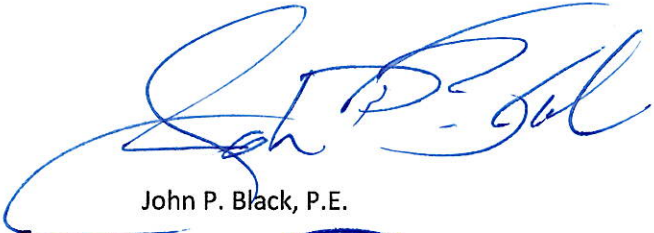


Engineering Certification

I, John P. Black, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Assessment and Management of the Laboratory Building Sanitary Sewer Investigation Work Plan was prepared in accordance with all applicable statutes and regulators and in substation conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and DER Green Remediation (DER-31).

Respectfully Submitted,

Inventum Engineering, P.C.



John P. Black, P.E.

Date: June 10, 2026

License No: 062818-1

Seal:



It is a violation of the laws of New York, for any person, unless acting under the direction of a Licensed Professional Engineer, to alter any item or any portion of this document in any way. If an item bearing the seal of a Licensed Professional Engineer is altered, the altering Engineer shall affix to the item his/her seal and notation "altered by" followed by his/her signature and the date of such alternation, and a specific description of the alteration.



Tables





Table 1
 Valve Pit Sediment Sample
 3821 River Road, Inc.
 3821 River Road
 Tonawanda, New York

Analyte	Commercial	Units	SD-PBCP-10	
	Sample Date:		10/12/2023	
	Sample Depth:		0'	
	Formation/Location:		Valve Pit Sediment	
VOCs 8260C				
1,1,1-TRICHLOROETHANE	500,000	ug/Kg	<0.32	U
1,1,2,2-TETRACHLOROETHANE	-	ug/Kg	<0.72	U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	-	ug/Kg	<1.0	U
1,1,2-TRICHLOROETHANE	-	ug/Kg	<0.58	U
1,1-DICHLOROETHANE	240,000	ug/Kg	<0.54	U
1,1-DICHLOROETHENE	500,000	ug/Kg	<0.55	U
1,2,4-TRICHLOROBENZENE	-	ug/Kg	<0.27	U
1,2-DIBROMO-3-CHLOROPROPANE	-	ug/Kg	<2.2	U
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	-	ug/Kg	<0.57	U
1,2-DICHLOROBENZENE	500,000	ug/Kg	<0.35	U
1,2-DICHLOROETHANE	30,000	ug/Kg	<0.22	U
1,2-DICHLOROPROPANE	-	ug/Kg	<2.2	U
1,3-DICHLOROBENZENE	280,000	ug/Kg	<0.23	U
1,4-DICHLOROBENZENE	130,000	ug/Kg	<0.63	U
2-HEXANONE	-	ug/Kg	<2.2	U
ACETONE	500,000	ug/Kg	14	J
BENZENE	44,000	ug/Kg	<0.22	U
BROMODICHLOROMETHANE	-	ug/Kg	<0.60	U
BROMOFORM	-	ug/Kg	<2.2	U
BROMOMETHANE	-	ug/Kg	<0.40	U
CARBON DISULFIDE	-	ug/Kg	<2.2	U
CARBON TETRACHLORIDE	22,000	ug/Kg	<0.43	U
CHLOROBENZENE	500,000	ug/Kg	<0.59	U
CHLOROETHANE	-	ug/Kg	<1.0	U
CHLOROFORM	350,000	ug/Kg	<0.28	U
CHLOROMETHANE	-	ug/Kg	<0.27	U
Cis-1,2-Dichloroethylene	500,000	ug/Kg	<0.57	U
CIS-1,3-DICHLOROPROPENE	-	ug/Kg	<0.64	U
CYCLOHEXANE	-	ug/Kg	<0.63	U
DIBROMOCHLOROMETHANE	-	ug/Kg	<0.57	U
DICHLORODIFLUOROMETHANE	-	ug/Kg	<0.37	U
ETHYLBENZENE	390,000	ug/Kg	<0.31	U
Isopropylbenzene (Cumene)	-	ug/Kg	<0.67	U
M,P-XYLENES	500,000	ug/Kg	<0.75	U
METHYL ACETATE	-	ug/Kg	<2.7	U
METHYL ETHYL KETONE (2-BUTANONE)	500,000	ug/Kg	<1.6	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	-	ug/Kg	<1.5	U
METHYLCYCLOHEXANE	-	ug/Kg	<0.68	U
METHYLENE CHLORIDE	500,000	ug/Kg	<2.1	U
O-XYLENE (1,2-DIMETHYLBENZENE)	500,000	ug/Kg	<0.58	U
STYRENE	-	ug/Kg	<0.22	U
TERT-BUTYL METHYL ETHER	500,000	ug/Kg	<0.44	U
TETRACHLOROETHYLENE(PCE)	150,000	ug/Kg	<0.60	U
TOLUENE	500,000	ug/Kg	0.93	J
TRANS-1,2-DICHLOROETHENE	500,000	ug/Kg	<0.46	U
TRANS-1,3-DICHLOROPROPENE	-	ug/Kg	<2.0	U
TRICHLOROETHYLENE (TCE)	200,000	ug/Kg	<0.98	U
TRICHLOROFLUOROMETHANE	-	ug/Kg	<0.42	U
VINYL CHLORIDE	13,000	ug/Kg	<0.54	U
Xylenes	500,000	ug/Kg	<0.75	U



Table 1
Valve Pit Sediment Sample
3821 River Road, Inc.
3821 River Road
Tonawanda, New York

Analyte	Commercial	Units	SD-PBCP-10	
	Sample Date:		10/12/2023	
	Sample Depth:		0'	
	Formation/Location:		Valve Pit Sediment	
SVOCs #270D				
1,4-DIOXANE (P-DIOXANE)	130,000	ug/Kg	<70	U
2,4,5-TRICHLOROPHENOL	-	ug/Kg	<58	U
2,4,6-TRICHLOROPHENOL	-	ug/Kg	<43	U
2,4-DICHLOROPHENOL	-	ug/Kg	<23	U
2,4-DIMETHYLPHENOL	-	ug/Kg	<52	U
2,4-DINITROPHENOL	-	ug/Kg	<990	U
2,4-DINITROTOLUENE	-	ug/Kg	<44	U
2,6-DINITROTOLUENE	-	ug/Kg	<25	U
2-CHLORONAPHTHALENE	-	ug/Kg	<36	U
2-CHLOROPHENOL	-	ug/Kg	<39	U
2-Methylnaphthalene	-	ug/Kg	<43	U
2-Methylphenol (O-Cresol)	-	ug/Kg	<25	U
2-NITROANILINE	-	ug/Kg	<32	U
2-NITROPHENOL	-	ug/Kg	<61	U
3,3'-DICHLOROBENZIDINE	-	ug/Kg	<250	U
3-NITROANILINE	-	ug/Kg	<60	U
4,6-DINITRO-2-METHYLPHENOL	-	ug/Kg	<220	UT
4-BROMOPHENYL PHENYL ETHER	-	ug/Kg	<30	U
4-CHLORO-3-METHYLPHENOL	-	ug/Kg	<53	U
4-CHLOROANILINE	-	ug/Kg	<53	U
4-CHLOROPHENYL PHENYL ETHER	-	ug/Kg	<27	U
4-METHYLPHENOL (P-CRESOL)	-	ug/Kg	<25	U
4-NITROANILINE	-	ug/Kg	<110	U
4-NITROPHENOL	-	ug/Kg	<150	U
ACENAPHTHENE	500,000	ug/Kg	<32	U
ACENAPHTHYLENE	500,000	ug/Kg	<28	U
ACETOPHENONE	-	ug/Kg	<29	U
ANTHRACENE	500,000	ug/Kg	<53	U
ATRAZINE	-	ug/Kg	<75	U
BENZALDEHYDE	-	ug/Kg	<170	U
BENZO(A)ANTHRACENE	5,600	ug/Kg	110	J
BENZO(A)PYRENE	1,000	ug/Kg	150	J
BENZO(B)FLUORANTHENE	5,600	ug/Kg	180	J
BENZO(G,H,I)PERYLENE	500,000	ug/Kg	72	J
BENZO(K)FLUORANTHENE	56,000	ug/Kg	74	J
BENZYL BUTYL PHTHALATE	-	ug/Kg	44	J
BIPHENYL (DIPHENYL)	-	ug/Kg	<32	U
BIS(2-CHLOROETHOXY) METHANE	-	ug/Kg	<46	U
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	-	ug/Kg	<28	U
BIS(2-CHLOROISOPROPYL) ETHER	-	ug/Kg	<43	UJ
BIS(2-ETHYLHEXYL) PHTHALATE	-	ug/Kg	<74	U
CAPROLACTAM	-	ug/Kg	<65	U
CARBAZOLE	-	ug/Kg	<25	U
CHRYSENE	56,000	ug/Kg	130	J
DIBENZ(A,H)ANTHRACENE	560	ug/Kg	<38	U
DIBENZOFURAN	-	ug/Kg	<25	U
DIETHYL PHTHALATE	-	ug/Kg	<28	U
DIMETHYL PHTHALATE	-	ug/Kg	<25	U
DI-N-BUTYL PHTHALATE	-	ug/Kg	<37	U
DI-N-OCTYLPHTHALATE	-	ug/Kg	<25	U
FLUORANTHENE	500,000	ug/Kg	250	
FLUORENE	500,000	ug/Kg	<25	U
HEXACHLOROBENZENE	-	ug/Kg	<29	U
HEXACHLOROBUTADIENE	-	ug/Kg	<32	U
HEXACHLOROCYCLOPENTADIENE	-	ug/Kg	<29	U
HEXACHLOROETHANE	-	ug/Kg	<28	U
INDENO(1,2,3-C,D)PYRENE	5,600	ug/Kg	70	J
ISOPHORONE	-	ug/Kg	<46	U
NAPHTHALENE	500,000	ug/Kg	52	J
NITROBENZENE	-	ug/Kg	<24	U
N-NITROSODI-N-PROPYLAMINE	-	ug/Kg	<37	U
N-NITROSODIPHENYLAMINE	-	ug/Kg	<180	U
PENTACHLOROPHENOL	6,700	ug/Kg	<220	UT
PHENANTHRENE	500,000	ug/Kg	92	J
PHENOL	500,000	ug/Kg	<33	U
PYRENE	500,000	ug/Kg	160	J



Table 1
 Valve Pit Sediment Sample
 3821 River Road, Inc.
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 Tonawanda, New York

Analyte	Commercial	Units	SD-PBCP-10	
	Sample Date:		10/12/2023	
	Sample Depth:		0'	
	Formation/Location:		Valve Pit Sediment	
Cyanide 9012				
CYANIDE	27	mg/Kg	<0.60	UJ
Mercury 7471B				
MERCURY	2.8	mg/Kg	8.4	
Metals 6010C				
ALUMINUM	-	mg/Kg	5170	
ANTIMONY	-	mg/Kg	<0.52	UJ
ARSENIC	16	mg/Kg	5.6	
BARIUM	400	mg/Kg	30.4	
BERYLLIUM	590	mg/Kg	0.24	J
CADMIUM	9.3	mg/Kg	0.14	J
CALCIUM	-	mg/Kg	57800	B
CHROMIUM, TOTAL	1,500	mg/Kg	11.6	
COBALT	-	mg/Kg	3.2	
COPPER	270	mg/Kg	23.3	
IRON	-	mg/Kg	20800	B
LEAD	1,000	mg/Kg	10.9	
MAGNESIUM	-	mg/Kg	8220	
MANGANESE	10,000	mg/Kg	428	B
NICKEL	310	mg/Kg	12.5	
POTASSIUM	-	mg/Kg	1180	
SELENIUM	1,500	mg/Kg	<0.52	U
SILVER	1,500	mg/Kg	<0.26	UJ
SODIUM	-	mg/Kg	92	J
THALLIUM	-	mg/Kg	<0.39	U
VANADIUM	-	mg/Kg	10	
ZINC	10,000	mg/Kg	84.4	
Hexavalent Chromium 7196A				
CHROMIUM, HEXAVALENT	400	mg/Kg	-	

NY-RESC: New York NYCRR Part 375 Commercial Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

Note:

At the time of analysis, Europhins Buffalo had a lapse certification status. The validity and usability of this data was not affected. The analysis methods affected were 6010C, 8081B, and 200.7.

A copy of the referenced letter can be provided upon request.

Reference: Mark A Nemecek (Europhins Environmental Testing) to James Edwards (Invention Engineering), 05/21/2024, Europhins Buffalo Certification Status.



Table 2
 Valve Pit Water Sample
 3821 River Road, Inc.
 3821 River Road
 Tonawanda, New York

Analyte	CAS Number	Class GA NYS Ambient	Units	SW-PBCP-08	
		Water Quality	Sample Date:	10/12/2023	
		Standards and		4/25/2025	
		Guidance Values		0'	
Formation/Location:		Valve Pit Water	Valve Pit Water		
Priority Pollutants 624.1					
1,1,1-TRICHLOROETHANE	71-55-6	5	ug/L	<0.39 U	<0.57 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	5	ug/L	<0.26 U	<0.41 UJ
1,1,2-TRICHLOROETHANE	79-00-5	1	ug/L	<0.48 U	<0.68 U
1,1-DICHLOROETHANE	75-34-3	5	ug/L	<0.59 U	<0.79 U
1,1-DICHLOROETHENE	75-35-4	5	ug/L	<0.85 U	<0.62 U
1,2-DICHLOROBENZENE	95-50-1	3	ug/L	<0.44 U	<0.55 U
1,2-DICHLOROETHANE	107-06-2	0.6	ug/L	<0.60 U	<0.94 U
1,2-DICHLOROPROPANE	78-87-5	1	ug/L	<0.61 U	<0.93 U
1,3-DICHLOROBENZENE	541-73-1	3	ug/L	<0.54 U	<0.55 U
1,4-DICHLOROBENZENE	106-46-7	3	ug/L	<0.51 U	<0.57 U
2-BUTANONE	78-93-3	50	ug/L	-	<2.1 UJ
2-CHLOROETHYL VINYL ETHER	110-75-8	-	ug/L	<1.9 U	<0.69 U
2-HEXANONE		50	ug/L	-	<1.1 U
4-METHYL-2-PENTANONE	108-10-1	-	ug/L	-	<0.38 U
ACETONE	67-64-1	50	ug/L	-	<4.7 U
ACROLEIN	107-02-8	5	ug/L	<1.7 U	<3.6 U
ACRYLONITRILE	107-13-1	5	ug/L	<1.9 U	<0.67 U
BENZENE	71-43-2	1	ug/L	<0.60 U	<0.77 U
BROMODICHLOROMETHANE	75-27-4	50	ug/L	<0.54 U	<0.55 U
BROMOFORM	75-25-2	50	ug/L	<0.47 U	<0.43 U
BROMOMETHANE	74-83-9	5	ug/L	<1.2 U	<2.4 U
CARBON DISULFIDE	75-15-0	60	ug/L	-	<0.57 U
CARBON TETRACHLORIDE	56-23-5	5	ug/L	<0.51 U	<0.49 U
CHLOROBENZENE	108-90-7	5	ug/L	<0.48 U	<0.61 U
CHLOROETHANE	75-00-3	5	ug/L	<0.87 U	<0.74 U
CHLOROFORM	67-66-3	7	ug/L	<0.54 U	<0.76 U
CHLOROMETHANE	74-87-3	5	ug/L	<0.64 U	<2.1 U
CIS-1,2-DICHLOROETHENE	156-59-2	5	ug/L	-	<0.34 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.4	ug/L	<0.33 U	<0.67 U
DIBROMOCHLOROMETHANE	124-48-1	50	ug/L	<0.41 U	<0.54 U
DIBROMOMETHANE	74-95-3	5	ug/L	-	0.62 U
DICHLOROETHYLENES	540-59-0	-	ug/L	<3.2 U	-
ETHYLBENZENE	100-41-4	5	ug/L	<0.46 U	<0.56 U
METHYLENE CHLORIDE	75-09-2	5	ug/L	<0.81 U	<1.1 U
O-XYLENE	95-47-6	5	ug/L	-	<0.68 U
P/M-XYLENE	179601-23-1	5	ug/L	-	<0.61 U
STYRENE	100-42-5	5	ug/L	-	<0.74 UJ
TETRACHLOROETHENE	127-18-4	5	ug/L	-	<0.52 U
TETRACHLOROETHYLENE(PCE)	127-18-4	5	ug/L	<0.34 U	-
TOLUENE	108-88-3	5	ug/L	<0.45 U	<0.63 U
TRANS-1,2-DICHLOROETHENE	156-60-5	5	ug/L	<0.59 U	<0.66 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.4	ug/L	<0.44 U	1.9 J
TRICHLOROETHENE	79-01-6	5	ug/L	-	<0.67 UJ
TRICHLOROFLUOROMETHANE	75-69-4	5	ug/L	-	<0.55 U
VINYL ACETATE	108-05-4	-	ug/L	-	<0.82 UJ
TRICHLOROETHYLENE (TCE)	79-01-6	5	ug/L	<0.60 U	-
VINYL CHLORIDE	75-01-4	2	ug/L	<0.75 U	<0.75 U
XYLENES, TOTAL	1330-20-7	-	ug/L	-	<0.61 U



Table 2
Valve Pit Water Sample
3821 River Road, Inc.
3821 River Road
Tonawanda, New York

Analyte	CAS Number	Class GA NYS Ambient	Units	SW-PBCP-08		
		Water Quality	Sample Date:	10/12/2023	4/25/2025	
		Standards and		Sample Depth:	0'	0'
		Guidance Values		Formation/Location:	Valve Pit Water	Valve Pit Water
Priority Pollutants 625.1						
1,2,4-TRICHLOROENZENE	120-82-1	5	ug/L	<0.21 U	<1.49 U	
1,2-DICHLOROBENZENE	95-50-1	3	ug/L	<0.27 U	-	
1,2-DIPHENYLHYDRAZINE	122-66-7	-	ug/L	<0.20 U	-	
1,3-DICHLOROBENZENE	541-73-1	3	ug/L	<0.18 U	-	
1,4-DICHLOROBENZENE	106-46-7	3	ug/L	<0.21 U	-	
2,4,5-TRICHLOROPHENOL	95-95-4	-	ug/L	-	<0.637 U	
2,4,6-TRICHLOROPHENOL	88-06-2	1	ug/L	<0.26 U	<0.607 U	
2,4-DICHLOROPHENOL	120-83-2	1	ug/L	<0.20 U	<0.554 U	
2,4-DIMETHYLPHENOL	105-67-9	1	ug/L	<0.36 U	<0.851 U	
2,4-DINITROPHENOL	51-28-5	1	ug/L	<1.3 U	<1.21 UJ	
2,4-DINITROTOLUENE	121-14-2	5	ug/L	<0.41 U	<0.636 U	
2,6-DINITROTOLUENE	606-20-2	5	ug/L	<0.26 U	<0.631 U	
2-CHLORONAPHTHALENE	91-58-7	10	ug/L	<0.23 U	<0.319 U	
2-CHLOROPHENOL	95-57-8	1	ug/L	<0.17 U	<0.513 U	
2-METHYLNAPHTHALENE	91-57-6	-	ug/L	-	<0.351 U	
2-METHYLPHENOL	95-48-7	-	ug/L	-	<0.773 U	
2-NITROPHENOL	88-75-5	1	ug/L	<0.18 U	<0.604 U	
3,3'-DICHLOROBENZIDINE	91-94-1	5	ug/L	<0.41 U	<0.457 U	
3-METHYLPHENOL/4-METHYLPHENOL	-	-	ug/L	-	<0.511 U	
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1	ug/L	<0.46 U	<1.2 U	
4-BROMOPHENYL PHENYL ETHER	101-55-3	-	ug/L	<0.36 U	<0.447 U	
4-CHLOROANILINE	106-47-8	5	ug/L	-	<0.79 UJ	
4-CHLORO-3-METHYLPHENOL	59-50-7	1	ug/L	<0.28 U	-	
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	-	ug/L	<0.34 U	<0.371 U	
4-NITROPHENOL	100-02-7	1	ug/L	<0.50 U	<0.834 UJ	
ACENAPHTHENE	83-32-9	20	ug/L	<0.21 U	<0.407 U	
ACENAPHTHYLENE	208-96-8	-	ug/L	<0.22 U	<0.93 U	
ANTHRACENE	120-12-7	50	ug/L	<0.36 U	<0.791 U	
AZOENZENE	103-33-3	5	ug/L	-	<0.889 U	
BENZIDINE	92-87-5	5	ug/L	<14 U	<12.1 U	
BENZO(A)ANTHRACENE	56-55-3	0.002	ug/L	<0.28 U	<0.665 U	
BENZO(A)PYRENE	50-32-8	-	ug/L	<0.34 U	<0.61 U	
BENZO(B)FLUORANTHENE	205-99-2	0.002	ug/L	<0.31 U	<0.741 U	
BENZO(G,H,I)PERYLENE	191-24-2	-	ug/L	<0.39 U	<0.672 U	
BENZO(K)FLUORANTHENE	207-08-9	0.002	ug/L	<0.34 U	<0.739 U	
BENZOIC ACID	65-85-0	-	ug/L	-	<1.17 U	
BENZYL ALCOHOL	100-51-6	-	ug/L	-	<0.49 U	
BENZYL BUTYL PHTHALATE	85-68-7	50	ug/L	<0.28 U	<0.67 U	
BIS(2-CHLOROETHOXY) METHANE	111-91-1	5	ug/L	<0.19 U	<0.585 U	
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	111-44-4	1	ug/L	<0.24 U	<0.6 U	
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	5	ug/L	<0.22 U	<0.822 UJ	
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	5	ug/L	<0.31 U	<1.7 U	
CHRYSENE	218-01-9	0.002	ug/L	<0.26 U	<0.668 U	
DI-N-BUTYL PHTHALATE	84-74-2	50	ug/L	<0.41 U	<0.631 U	
DI-N-OCTYL PHTHALATE	117-84-0	50	ug/L	<0.31 U	<0.633 U	
DIBENZO(A,H)ANTHRACENE	53-70-3	-	ug/L	<0.39 U	<0.687 U	
DIBENZOFURAN	132-64-9	-	ug/L	-	<0.373 U	
DIETHYL PHTHALATE	84-66-2	50	ug/L	<0.26 U	<0.717 U	
DIMETHYL PHTHALATE	131-11-3	50	ug/L	<0.23 U	<1.4 U	
FLUORANTHENE	206-44-0	50	ug/L	<0.41 U	<0.736 U	
FLUORENE	86-73-7	50	ug/L	<0.26 U	<0.927 U	
HEXACHLOROENZENE	118-74-1	0.04	ug/L	<0.26 U	<0.952 U	
HEXACHLOROBUTADIENE	87-68-3	0.5	ug/L	<0.26 U	<0.921 U	
HEXACHLOROCYCLOPENTADIENE	77-47-4	5	ug/L	<0.54 U	<1.36 UJ	
HEXACHLOROETHANE	67-72-1	5	ug/L	<0.15 U	<0.973 U	
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.002	ug/L	<0.39 U	<0.633 U	
ISOPHORONE	78-59-1	50	ug/L	<0.19 U	<0.546 U	
N-NITROSODI-N-PROPYLAMINE	621-64-7	-	ug/L	<0.23 U	<0.63 U	
N-NITROSODIMETHYLAMINE	62-75-9	-	ug/L	<0.15 U	<0.407 U	
NAPHTHALENE	91-20-3	10	ug/L	<0.22 U	<0.896 U	
N-NITROSODIPHENYLAMINE	86-30-6	50	ug/L	<0.21 U	<0.783 U	
NITROENZENE	98-95-3	0.4	ug/L	<0.21 U	<0.788 U	
P-CHLORO-M-CRESOL	59-50-7	-	ug/L	-	<0.533 U	
PENTACHLOROPHENOL	87-86-5	1	ug/L	<0.81 U	<0.622 U	
PHENANTHRENE	85-01-8	50	ug/L	<0.31 U	<0.818 U	
PHENOL	108-95-2	1	ug/L	<0.090 U	<0.262 U	
PYRENE	129-00-0	50	ug/L	0.53 J	<0.728 U	



Table 2
 Valve Pit Water Sample
 3821 River Road, Inc.
 3821 River Road
 Tonawanda, New York

Analyte	CAS Number	Class GA NYS Ambient Water Quality Standards and Guidance Values	Units	SW-PBCP-08		
				Sample Date:	10/12/2023	4/25/2025
				Sample Depth:	0'	0'
				Formation/Location:	Valve Pit Water	Valve Pit Water
Cyanide 335.4						
CYANIDE	57-12-5	0.2	mg/L	<0.0041 U	0.003 J	
Mercury 1631E						
MERCURY	7439-97-6	700	ng/L	27600	238	
Metals 200.7						
ALUMINUM			mg/L	-	0.171	
ANTIMONY		0.003	mg/L	-	<0.0071 U	
ARSENIC	7440-38-2	0.025	mg/L	0.034	<0.0019 U	
BARIUM	7440-39-3	1	mg/L	0.79	0.0509	
BERYLLIUM	7440-41-7	0.003	mg/L	0.0026	<0.0009 U	
CADMIUM	7440-43-9	0.005	mg/L	0.022	<0.001 U	
CALCIUM			mg/L	-	614	
CHROMIUM, TOTAL	7440-47-3	0.05	mg/L	0.07	<0.0021 U	
COBALT			mg/L	-	<0.0017 U	
COPPER	7440-50-8	0.2	mg/L	0.51	0.0037 J	
IRON		0.3	mg/L	-	1.46	
LEAD	7439-92-1	0.025	mg/L	0.71	<0.0027 U	
MAGNESIUM		35	mg/L	-	7.44	
MANGANESE		0.3	mg/L	-	0.269	
MERCURY		0.0007	mg/L	-	0.00047	
NICKEL	7440-02-0	0.1	mg/L	0.13	<0.0024 U	
POTASSIUM			mg/L	-	7.32	
SELENIUM	7782-49-2	0.01	mg/L	0.016 J	<0.0035 U	
SILVER	7440-22-4	0.05	mg/L	0.0036 J	<0.0028 U	
SODIUM		20	mg/L	-	5.1	
THALLIUM		0.0005	mg/L	-	<0.0025 U	
VANADIUM			mg/L	-	<0.002 U	
ZINC	7440-66-6	2	mg/L	4.6	0.0248	

Note:

At the time of analysis, Europhins Buffalo had a lapse certification status. The validity and usability of this data was not affected. The analysis methods affected were 6010C, 8081B, and 200.7.

A copy of the referenced letter can be provided upon request.

Reference: Mark A Nemeec (Europhins Environmental Testing) to James Edwards (Inventum Engineering), 05/21/2024, Europhins Buffalo Certification Status.

NY-AWQS: New York TOGS 111 Ambient Water Quality Standards & Guidance Values Criteria per Standards & Guidance Values including all addenda through February 2023.

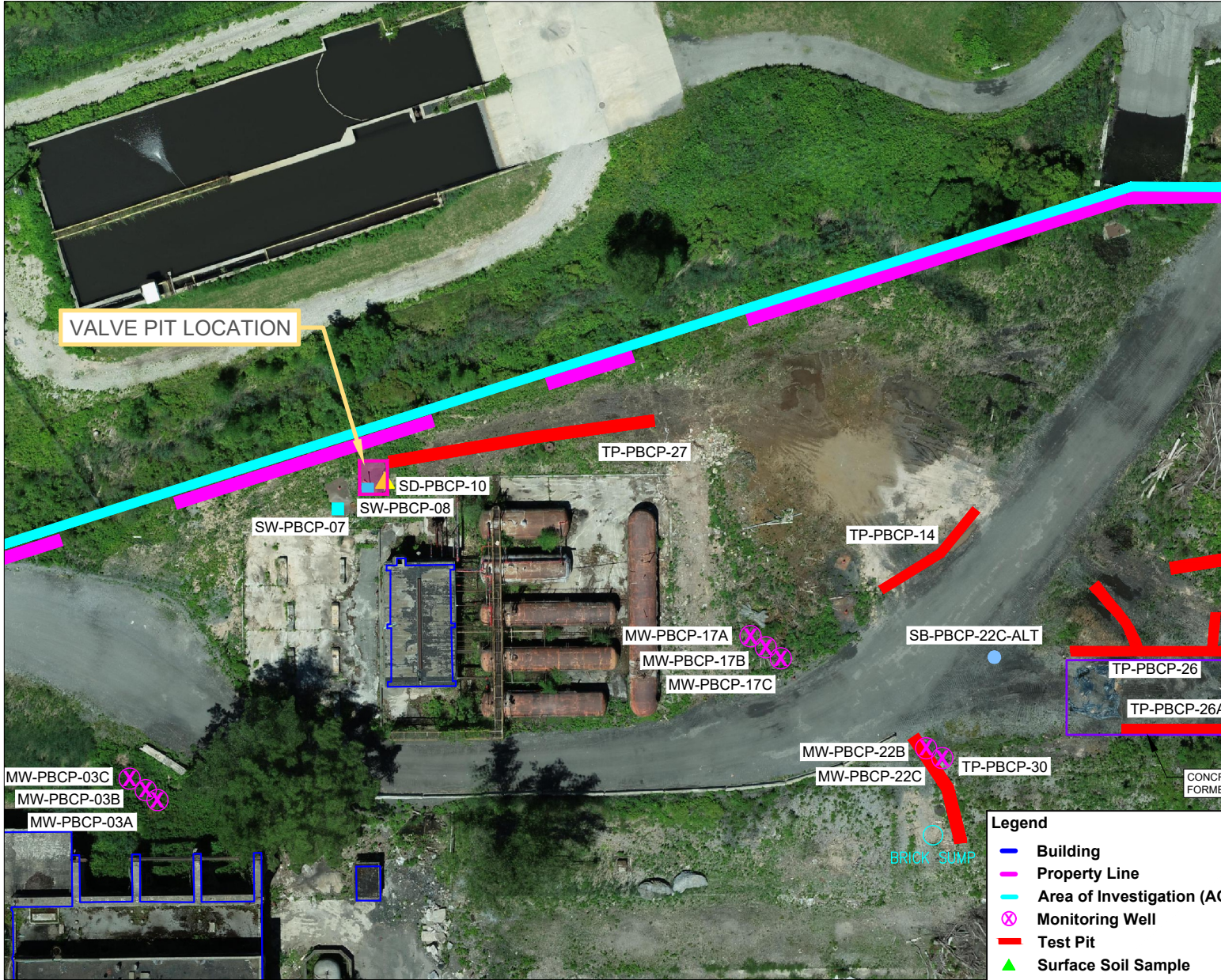
Notes:

U - Not detected at the reported detection limit for the sample.

Bold: Analyte detected.

Figure





VALVE PIT LOCATION

TP-PBCP-27

SD-PBCP-10

SW-PBCP-08

SW-PBCP-07

TP-PBCP-14

MW-PBCP-17A

MW-PBCP-17B

MW-PBCP-17C

SB-PBCP-22C-ALT

TP-PBCP-26

TP-PBCP-26A

MW-PBCP-22B

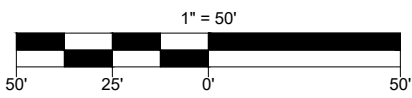
MW-PBCP-22C

TP-PBCP-30

CONCRETE FORM

BRICK SLUMP

A



NOTES:
1. AERIAL IMAGE PROVIDED BY WENDEL, JULY 2024.

- Legend**
- Building
 - Property Line
 - Area of Investigation (AOI)
 - ⊗ Monitoring Well
 - ⊗ Test Pit
 - ▲ Surface Soil Sample
 - ▲ Sediment Sample
 - ▲ Surface Water Sample
 - Sub-Slab Soil Vapor Sample
 - Soil Boring



DRAWING BY	CB
CHECKED BY	
APPROVED	
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VALVE PIT
 3821 RIVER ROAD INC
 3821 RIVER ROAD
 TONAWANDA, NEW YORK 14150
 BCP SITE No. C915003

INVENTUM ENGINEERING
 441 CARLISLE DRIVE
 SUITE C
 HERNDON, VIRGINIA 20170
 (703) 722-6049
 www.InventumEng.com

FIGURE 1
 DRAWING NUMBER

Appendices



Appendix A - HASP, HASP Addendum, and the AHA



Site Specific Health and Safety Plan

Tonawanda Plastics

Rev. 4.0

3821 River Road
TONAWANDA, NY

Submitted to:

3821 River Rd, Inc.
140 Lee Street, Suite 200
Buffalo, NY 14210

Prepared by:



140 Lee Street
Buffalo, NY 14210

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Authorization Signatures

This Site-Specific Health and Safety Plan (SSHASP) has been reviewed and approved by the individuals below. The undersigned certify that to the best of their knowledge this SSHASP meets the safety requirements as defined by the project specifications and all known applicable governing regulatory requirements.



John Yersan, President
OSC

6/4/26

Date



Al Trpevski, Project Manager
OSC

6/4/26

Date



Matt Reardon, Superintendent
OSC

6/4/26

Date



Paul Mulvey, Director HS&E
OSC

2/16/2024

Date



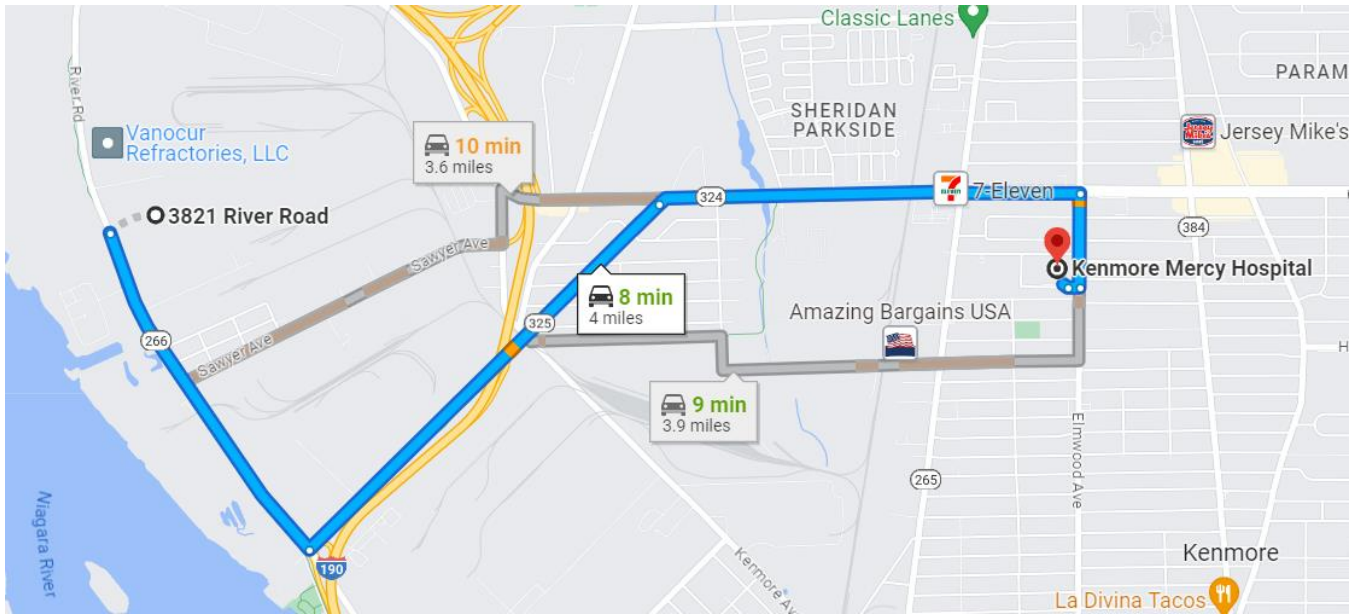
Emergency Contact List

Tonawanda Plastics 3821 River Road Tonawanda, New York 14150		
AGENCY	Contact	Phone Number
Owner's Representative	John Black Project Manager	571-217-6761
OSC	Matt Reardon Superintendent	716-570-0717
	Brian Rudnick Site Health and Safety Officer (HSO)	716-864-7585
	Al Trpevski Project Manager	716-818-3390
	John Yensan President	716-583-4400
	Paul Mulvey Director HS&E	702-677-2967
Kenmore Mercy Hospital	Medical Emergency	911 (direct) 716-447-6100
Fire, Police, Ambulance	Dispatch	911
Utilities	Water Gas Electric	911
Town of Tonawanda Wastewater Treatment	Paul Morrow Pretreatment Coordinator	716-693-4900 ext. 4550 716-818-5879 (cell)

AGENCY	Contact	Phone Number
Site Emergency	Police, Fire Dept., Ambulance	911
Fire Department		911
Police Department & Security		911
Ambulance		911
Spill Emergency	Paul Morrow Pretreatment Coordinator	716-693-4900 ext. 4550 716-818-5879 (cell)
Poison Control	American Association of Poison Controls	1-800-222-1222
US EPA Release Report Number	National Response Center	1-800-424-8802
HAZARDOUS MATERIALS	CHEMTREC (CCN 101139)	1-800-424-9300

LOCAL MEDICAL

**Kenmore Mercy Hospital, 2950 Elmwood Ave 14127
(Dial 911 for Emergency) (716) 447-6100**



- Turn left onto River Road (1.1 mi)
- Turn left onto Sheridan Drive (1.4 mi)
- Merge right to stay on Sheridan Dr. (1.2 mi)
- Turn right onto Elmwood Ave. (0.3 mi)
- The hospital is on the right.

OSC Medical Consultant:

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

Non-medical Emergency:

FOCUS Occupational Services, LLC
2099 Niagara Falls Blvd.
Amherst, NY 14228
(716) 710-8072



INTRODUCTION

SITE BACKGROUND

The Brownfield Cleanup Program site consists of approximately 17.446 acres located at 3821 River Road, Town of Tonawanda, Erie County, New York. The Site is located approximately 0.25 miles west of I-90 on the east side of River Road. The surrounding properties are primarily industrial or vacant.

The Site was originally developed by Allied Fibers and Plastics Company (Allied), now known as Honeywell International, in the early 1950s, and was operated as a manufacturing facility through 1982. Site operations included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C Polyethylene and Co-polymers), which was finished into powder, pelleted and solid forms. The property was sold to Rouse Breihan, Inc. in 1985. Rouse Breihan conducted some management and laboratory testing for the Tonawanda Coke Corporation (TCC) on the proposed BCP Site. A trucking firm also used the site for vehicle maintenance and parking. The Site has been vacant since 2019. 3821 River Road, Inc. purchased the Site from Rouse Breihan, Inc. on August 2, 2022.

Approximately 23 buildings are present on the Site and 12 aboveground storage tanks (AST) with aboveground and below grade piping are located in the center portion of the Site. The remaining buildings are unoccupied and unmaintained.

Previous Site Remediation

During the summer of 1981, approximately 500 cubic yards (CY) of “tar” and soils were excavated and removed from an area approximately 100-feet by 10 to 20-feet wide located in the eastern portion of the Site along the southern property boundary. The Coal Tar Site (NYSDEC Inactive Hazardous Waste Site 915003C) consisted of an area of the plant property where pools of what was described as “coal tar”, from spillage and leakage during product-transfer operations, were located. The tar removal was completed by the TCC, under agreement with Allied, as part of the demolition of the idle facility termed the “tar storage” terminal. Tar removal was completed to the underlying clay layer. Analytical results of confirmatory soil samples collected following the excavation showed that residual chemicals of concern (COCs) were not detected or were in low parts per million (ppm) concentrations. Three test holes adjacent to the excavation were completed to a depth of approximately three feet to determine if any further migration of coal tar had taken place and no contamination was observed in the test holes. In addition to the “tar” and soil removal, a buried coal tar pipeline was also removed to the property limits. As part of the pipeline removal, an underground tank which was used as a “blow-down” tank for the transfer line, was removed. NYSDEC informed Allied in October 1981 that no further remediation was necessary in the Coal Tar Site and blow down tank area.

The site was sampled by the United States Geological Survey (U.S.G.S.) in July of 1982 and in May of 1983 under the Niagara River Toxics Investigation. Chromium and lead exceeded concentrations



in samples taken from undisturbed soils in the Tonawanda area. Twenty-one organic priority pollutants were detected in the soil samples and all concentrations were below 10 parts per billion (ppb). A Phase I Investigation was completed in 1983 and an investigation was carried out at the end of 1988. Soil samples collected inside the pit showed high levels of chromium and elevated levels of lead. Sediment from an onsite catch basin showed elevated metals concentrations. Sampling and analysis of five off-site sewer samples showed no migration from this source. To further the investigation, up-gradient monitoring wells and four additional wells were installed. Sampling of the monitoring wells over one year showed groundwater exceedances for cyanide, benzene, ethylbenzene, toluene, xylene, and numerous poly aromatic hydrocarbons (PAH) compounds.

Project Scope

3821 River Rd, Inc. has contracted OSC, Inc. for the overall demolition and remediation of the former Tonawanda Plastics Plant property in Tonawanda, NY. Remediation will be per requirements of the New York State Brownfield Cleanup Program (NYSBCP) and the New York State Inactive Hazardous Waste Site Program (aka State Superfund). Inventum Engineering, PC is providing technical guidance for the project.

The work includes, but is not limited, to the following:

- Mobilization
- Installation of erosion and sediment controls
- Installation of site temporary features (waste/equipment decontamination pads, temporary access roads, and temporary utilities)
- Asbestos removal on structures, building materials, fittings, and debris.
- Stabilization and removal of above ground tank contents
- Removal of hazardous process and product waste chemicals as well as universal waste
- Cleaning/decontamination of above ground structures deemed to remain on site.
- Overhead, above ground, and below grade pipe removal.
- Demolition of buildings, structures, and tanks not to remain on site.
- Treatment/neutralization of surface soils and water as reasonably feasible per NYSBCP
- Removal of grossly contaminated soil not otherwise treated/neutralized.
- Tank cleaning and costing for scrap.
- Dewater
- Grading
- Restoration and seed stabilization
- Demobilization

APPLICABILITY and REFERENCES

OSC has developed the following Site-Specific Health and Safety Plan (SSHASP) in accordance with the project contract requirements and Federal, State and Local regulations. It is intended for individuals performing work at the site and not for those considered visitors for observation only



tasks. All operations and equipment used in conjunction with this contract shall, at a minimum, comply with the following:

- New York State Brownfield Cleanup Program
- Project Site Specific Health and Safety Plan (this SSHASP)
- OSC Technical Work Plan
- OSHA 29 CFR 1910: Occupational Safety and Health Standards – General Industry
- OSHA 29 CFR 1926: Safety and Health Regulations for Construction
- EPA 9285.1-03: Office of Emergency and Remedial Response – Standard Operating Safety Guides
- OSC Corporate Health, Safety and Environmental Program Manual
- Orientation and Training (Supervision, Laborers, Operators & Visitors)
- Job Hazard Analysis (JHA)
- Standard Operating Procedures; Emergency Response, Reporting, Incident Investigation, Inspections, Audits, Work Procedures, Hazard Communication, Hot Work, Confined Space, Fire Prevention, Control of Hazardous Energy (Lockout, Tagout, Tryout), Excavations, Controlled Work Zones including decontamination, Ladders, Steps, Stairs, Scaffolding Contractor/Vendor Safety Checklist, Heavy Equipment Operation, Forklift Operation, Powered Aerial Platforms
- Substance Abuse Policy
- Receive site orientation training regarding the project requirements contained in this SSHASP. Site orientation will be conducted by OSC’s Health and Safety Officer (HSO) named in Section 2.0 of this HASP.
- Acknowledge in writing, on page 4 of this SSHASP titled Conformance Signatures that they have received the site-specific orientation and therefore, have been trained in and understand the contents of this HASP and the general site safety requirements.

The health and safety protocol that is established in this SSHASP is based upon the known site conditions and or conditions anticipated to be present from established site data. This SSHASP is a living document that shall be updated and or revised over the term of this contract as warranted by change in site conditions, scope of work, methods, and improvement measures. A copy of this SSHASP shall be maintained at the project site.

DEFINITIONS

The Owner: 3821 River Rd, Inc.

The Engineer: Inventum (Owner Representative)

The Contractor: OSC – Company retained by owner to conduct the project.

The Project: Brownfield Cleanup Program, 3821 River Road, Tonawanda, NY

The Project Site: The area designated as the Contractor work area.



Contractor Work Area: An area of the Project site which includes the support zones, access roads, staging areas, contamination reduction zones and exclusion zones.

Active Full Time Project Personnel: All personnel who are permanently assigned to the project and required to perform work. Does not include visitors or vendors visiting the site temporarily who are required to be escorted always by an authorized and trained project employee.

Qualified Person: A person with a recognized degree, or professional certificate, along with extensive knowledge and experience in the subject field who can do design, analysis, evaluation and specifications.

Competent Person: A person who can identify existing any predictable hazards in their surroundings/working conditions which are unsanitary, hazardous or dangerous to employees, and who has both knowledge and authorization to take prompt corrective measures to eliminate them.

Authorized Personnel: A person that is approved or assigned by OSC to perform a specific type of duty/duties, or to be at a specific location(s) at the project site.

Stop Work Authority: HS&E personnel, qualified and competent persons, owner representatives and *all project employees* shall have the authority to stop work in any situation deemed unsafe to those working on the project site, or in any situation that poses a risk to the environment. Work will remain stopped until the involved parties correct their impact or conditions as per the requirements of this HASP.

Contamination Reduction Zone (CRZ): The CRZ is the transitional area between the identified contaminated and clean areas. The CRZ will be provided for the transfer of equipment and materials to and from the exclusion zone; the decontamination of personnel and equipment existing in the exclusion zone; and the physical segregation of the clean and contaminated work areas.

Exclusion Zone (EZ): The exclusion zone encompasses the areas of the contaminates of concern (COCs); as well as any areas being utilized for the temporary storage of salvaged materials [ex. valves] and spoils to be discarded as waste. The purpose of the EZ is to limit access to only qualified and necessary personnel and manage the potential spread of COCs.

SITE VISITOR REQUIREMENTS

A safe location, where all visitors can observe site activities of interest will be identified by the HSO. Anyone visiting the site will receive site-specific instructions from the HSO. All visitors shall be escorted at all times by site trained personnel after signing in and completing orientation. Visitor training will include at a minimum:

- OSC Project Safety Orientation and general site orientation.
- Project Hazard Communication system
- Job Hazard Analysis (AHA) review (as needed)
- Work Permit Process (as needed)
- Safety Meetings and Inspections

- PPE requirements.
- Decontamination procedures (as needed).
- Emergency procedures, and
- Any other site-specific information that the HSO deems necessary.

Any visitor wishing to enter an established contamination reduction zone (CRZ), or exclusion zone will be required to provide the HSO with documentation of medical monitoring and training equivalent to the requirements of this HASP for that area. Only authorized visitors with written proof that they have been medically certified and trained in accordance with project requirements will be permitted to enter the CRZ and/or exclusion area.

The only exception to this rule is for emergency personnel who may enter the work area without fully complying with the requirements of this subsection. Emergency crews will be quickly briefed as to site conditions and hazards by the HSO.

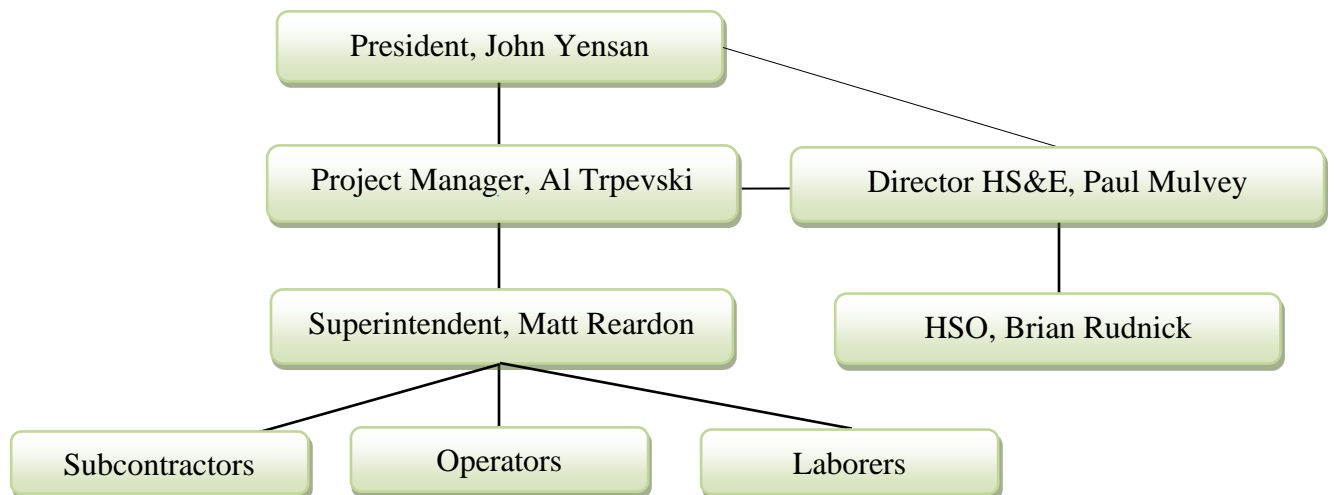
HEALTH and SAFETY ORGANIZATION

The following OSC management personnel will be assigned to this Project:

- President – John Yensan
- Project Manager – Al Trpevski
- Superintendent – Matt Reardon
- On Site Health & Safety Officer – Brian Rudnick
- Director HS&E – Ed Hartman

In addition to the above-listed management, OSC will provide the appropriate number of operators and laborers, as well as the required subcontractors for this project.

ORGANIZATION CHART





PERSONNEL RESPONSIBILITIES

PROJECT MANAGERS AND SUPERINTENDENTS

The Project Manager will be responsible for the overall direction and completion of this contract. The Project Manager reports to the President and will be responsible for managing and coordinating all project related activities; as well as serving as OSC's primary contact with the Owner and/or Owner's Representative. The Site Superintendent will be responsible for overseeing contractor and subcontractor operations in the field. The Site Superintendent will report directly to the Project Manager.

Project Managers and Superintendents will be responsible for the following:

- Assure daily compliance with the Corporate HS&E Manual and this SSHASP during the project.
- Implement the procedures and guidelines outlined in this SSHASP throughout the project.
- Implement incident investigations. The Site Superintendent will notify INVENTUM management and the OSC Director HS&E immediately. Documentation will be maintained on OSC's Incident Report (see attachment I). The Incident Report will be submitted to 3821 River Rd Inc representative (Inventum) by OSC. The HSO will conduct the incident investigation with support from the Superintendent and Director.
- Perform and support site safety audits and address all deficiencies.
- Provide incentive and motivation for safe work practices, as well as discipline for unsafe work practices.
- Ensuring a copy of this SSHASP is onsite always.
- Conduct initial site orientation meetings.

HEALTH AND SAFETY OFFICER (HSO)

The HSO will handle health and safety management on the project and will report to the Director HS&E. Specific duties of the HSO include:

- Overall implementation, enforcement and maintenance of this SSHASP.
- Act as a point of contact for all project site health and safety concerns.
- Conduct initial training of the contents of this HASP; as well periodic training for when rules/regulations change, new equipment or procedures are introduced, additional skills are needed, and new hazards are presented. Report observations in the daily safety meetings and update AHAs and training accordingly.
- Conduct daily meetings regarding health and safety.
- Supervising any additional HS&E requirements that are needed for this project.

The HSO will monitor the jobsite health and safety via inspection at the start and completion of each day's work; as well as monitoring the jobsite for this purpose throughout the day. The initial daily inspection will be recorded on OSC's inspection and audit form (Attachment I). Corrective actions and end-of-the-day inspection results will be recorded in the HSO's project safety logbook. Any deficiencies will be promptly corrected. All corrective and improvement measures will be



reviewed with project personnel at the morning daily safety briefing. Intentional violations of the site HS&E regulations will be grounds for disciplinary action, which could include temporary suspension or termination of personnel and/or expulsion of vendor and/or subcontractor personnel from the site.

HS&E TECHNICIANS (not anticipated for this project)

The HSO will assign qualified technicians (air monitoring, material sampling, equipment specific and job design professionals) to each work crew or task in hazardous areas as warranted.

OSC CORPORATE MEDICAL CONSULTANT AND NON-EMERGENCIES

The Medical Consultant will be available to provide call-in emergency medical consulting to OSC personnel on an around-the-clock basis. Medical emergencies occurring during normal work hours will be provided by the local hospital (see above). Non-emergency medical support and OSC's Medical Consultant are:

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

FOCUS Occupational Services, LLC
2099 Niagara Falls Blvd.
Amherst, NY 14228
716-710-8072

SUBCONTRACTORS

All subcontractors shall be prequalified according to the OSC subcontractor/vendor prequalification requirements including Certificates of Insurance that meet or exceed the project contract requirements.

All subcontractor employees shall be required to attend a project safety orientation prior to starting work on site (See Training and Orientation Requirements of this HASP). Subcontractors are responsible for health and safety as it pertains to their operations at the project site and shall provide the required OSC HS&E supporting documentation. Documented proof of training shall be provided for all subcontractor employees. All subcontractors are responsible for providing their employees with the proper site-specific PPE required to perform their work as well as to ensure that all tools and equipment they use are properly inspected and maintained. Subcontractors are responsible for ensuring that their employees conform to all HS&E project requirements and all applicable government regulations. Subcontractors shall formulate work specific JHA's and submit them to the OSC Project Manager and Safety Director for review and approval prior to starting work.

SITE SPECIFIC TRAINING and ORIENTATION

Personnel, including subcontractors, shall be provided with the training required to comply with this SSHASP. Training documentation (training certificates, attendance rosters) will be filed and maintained onsite by the HSO and will be made available for inspection upon request. Training documentation will be kept in an organized manner for each individual worker.



Full-time active project personnel working onsite must have received the following:

- Required safety training as defined by OSHA CFR 1926.21 for construction.
- OSHA 1926.65, HAZWOPER (employees potentially exposed to hazardous chemicals)
- Medical clearance - fit for work, (includes medical surveillance for specific occupations and probable contaminants) negative drug screen, clearance for respirator use, fit test and training for the type of respirator required.

Supervisor Training – in addition to the above all designated supervisors shall have as a minimum received training that covers competent person training for the specific operation, they are responsible for (i.e. excavation trenching and shoring, confined space, rigging, hot work, etc.), first aid and CPR, record keeping, incident investigation, employee substance abuse i.e., reasonable suspicion), HS&E documentation requirements.

TRAINING DOCUMENTATION

Documentation of training, provided by a qualified safety professional, will be maintained as necessary for the following topics:

- OSC Site Specific Orientation
- Job Hazard Analysis & Safe work procedures (JHA Review)
- Project Hazard Awareness training
- PPE requirements & possible decontamination procedures
- Heat/Cold Stress
- Fall Protection
- Heavy Equipment Operation (Authorized, Unauthorized)
- Powered Industrial Fork Truck Operation (Authorized, Unauthorized)
- Control of Hazardous Energy Lockout/Tagout and Air Gapping Requirements (1 ft visible air gap)
- Incident reporting
- Emergency response & available services (medical, fire, inclement weather, tornado, bomb threat, signals and procedures)
- Hoisting and Rigging
- Respirator use, maintenance, inspection, medical clearance, and fit test
- Excavation hazards and protective measures
- Confined Space if applicable.
- Dust, Erosion, and Sediment Control.
- Noise control measures
- OSC's STAC program
- Authority to stop work (all employees) and the buddy system "No One Works Alone".

JOB SPECIFIC SPECIALIZED TRAINING & MEDICAL CLEARANCE



OSC employees will all participate in the company's annual medical surveillance program which evaluates "fit for duty" condition. These evaluations will be provided by a licensed health care professional.

Employees that may be exposed to elevated levels of contaminants (to be determined) or that wish to use tight-fitting respirators on a voluntary basis will require a current medical evaluation and be respiratory qualified in compliance with OSHA 1910.134.

MEETINGS

Attendance at all HS&E meetings will be documented and filed onsite.

- Daily Morning Safety Brief prior to the start of work "Tool Box Talk".
- Prior to the beginning of each work task, all involved workers shall be required to attend a task-specific HS&E meeting to review task-specific health and safety requirements pertinent to the tasks (JHA review - job hazards and protective measures).

Weekly HS&E Meetings

All onsite Supervisory personnel shall be required to attend a weekly meeting, conducted by the owner representative, to review project and/or task specific procedures. Topics to be discussed at these weekly meetings include but are not limited to.

- AHA – review for all definable features of work, hazards, and controls.
- STAC - employee work observations and recommendations
- Audit/Inspection findings, and recommendations for improvement.
- Necessary training requirements and site work rules,
- Change in work practices and/or work conditions, incident reports.
- Precautions and work practices related to scheduled site activities.
- New or modified site wide procedures or requirements.
- Discussion of potential hazards or hazardous operations.
- Procedures in restricted areas.
- Equipment rules and requirements.
- Restrictions on the handling of materials.
- PPE requirements.
- Delegation of responsibility (emergency backup personnel, competent persons, etc.).
- Review of emergency response for anticipated situations (medical, fire, inclement weather, tornado, bomb threat, environmental release/spill) and communication methods (alarms, radio, voice, and hand signals).



HS&E AUDITS

The OSC Director, HSE will make project site visits to assure compliance with this HASP and aid as needed. Site audits will be made minimally on a quarterly basis using the company's audit criteria (see Appendix I Forms). An audit finding report will be submitted to the project manager and superintendent within 5 days of the site visit. Highlighted deficiencies must be corrected immediately if not done so during the site visit.

SUBSTANCE ABUSE SCREENING

OSC maintains a drug free workplace. The company prohibits the use, manufacture, sale, possession, or transfer of illegal drugs, alcohol, and controlled substances on project sites.

OSC requires pre-employment, reasonable suspicion and random substance abuse testing (random testing for project-assigned personnel only as required by contractual agreement). Post injury screening may also be conducted in conjunction with reasonable suspicion. Employees as a minimum will undergo testing for illegal drugs before working on the project. Drug and alcohol screens shall be managed by OSC using laboratories certified by HHS under the National Laboratory Certification Program (NLCP).

Reasonable suspicion testing may be triggered by direct observations of employee behavior or drug-related paraphernalia. Site personnel who have been observed using alcohol or controlled substances on site or during breaks at off-site locations after which they will return to work will be requested to take an alcohol or drug test. Reasonable suspicion includes possession (on person or in vehicles) of alcohol or controlled substances on site as well as paraphernalia that suggest drug use. Site personnel who exhibit signs, symptoms, or behaviors of drug or alcohol use as interpreted by a reasonable person will also be requested to take a drug and/or alcohol test.

NOTE - Prescription drugs taken without an authorized prescription for use is considered an illegal drug. Also, in case of any injury, incident, or emergency, employees may be required to undergo a 10-panel screen for illegal drugs, alcohol (breath), or prescribed medication. Submission to substance abuse testing is a condition of employment. Failure or refusal to submit to substance abuse testing is treated the same as a positive result. All reports will be maintained at the main office. Any positive results will be referred to OSC Senior Management for further action.

PROJECT OVERVIEW AND TASK RISK ANALYSIS

TASK/RISK ANALYSIS

A Job Hazard Analysis (JHA) shall be developed for significant features of work which break jobs down into individual tasks defining the potential hazard of that task and the proper protective and control measures that shall be taken to minimize the hazard. JHA's shall be submitted with any required daily work permit to the owner representative for their review. JHA's shall be modified as warranted by safe work observations, audit and incident investigation. Assessment of the work hazards associated with the scope of work for this project is provided in Table 1.0 below. PPE requirements for all work shall be primarily in level D; ANSI approved hard hat, safety glasses, hearing protection with elevated noise exposures (i.e., working with power tools or near sources of



loud noises), abrasion resistant gloves, safety toed boots or safety toed rubber boots (dependent on hazard exposure), high visibility traffic vest or equivalent high visibility clothing, and/or disposable coveralls (modified D). Specific information relating to the potential chemical, physical, biological and radiological hazards is provided in Table 1.1.

TABLE 1.0 OVERALL JOB HAZARD EXPOSURE (See also attachment I (JHA))	
	Potential Exposure
Mobilization and temporary facilities and controls; establishment of work zones: hazard warning signs, OSC designated work area signage including barricades and area delineation, address safe work surface needs, add lighting, traffic controls, dust, fire and erosion controls.	Low
Installation of erosion and sediment control	Moderate
Installation of site temporary features (waste/equipment decontamination pads, roads)	Moderate
Asbestos removal on structures, building materials, fittings, and debris	Moderate/High
Stabilization and removal of above ground tank contents	Moderate/High
Removal of hazardous process and product waste chemicals & universal waste	Moderate/High
Cleaning/decontamination of above ground structures deemed to remain on site	Moderate/High
Overhead and Below Grade Piping Removal	Moderate/High
Tank cleaning	Moderate/High
Mechanical demolition of buildings, structures, and tanks	Moderate/High
Treatment/neutralization of surface soils and water as reasonably feasible per NYSBCP	Moderate/High
Excavation / trenching / test pitting	Moderate/High
Installation of temporary groundwater treatment system	Moderate/High
Managing COG lines, product lines, and utilities	Moderate/High
Removal of grossly contaminated soil not otherwise treated	Moderate/High
Restoration and seed stabilization	Low
Demobilization	Low
<p><u>Low:</u> Non-intrusive work – Minimal hazard/chance of exposure. <u>Slight:</u> Non-intrusive work / Possible HS&E hazards with tools. – Little chance of exposure. <u>Moderate:</u> Non-intrusive work / Possible HS&E hazards with powered tools, heavy equipment and/or working near or in water – Little chance of exposure to contaminants. <u>Moderate/High:</u> Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is possible. <u>High:</u> Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is probable.</p>	

CONTAMINATE/CHEMICAL HAZARDS

Existing Site Hazards

The site was sampled by the United States Geological Survey (U.S.G.S.) in July of 1982 and in May of 1983 under the Niagara River Toxics Investigation. Chromium and lead exceeded concentrations in samples taken from undisturbed soils in the Tonawanda area. Twenty-one organic priority pollutants were detected in the soil samples and all concentrations were below 10 parts per billion (ppb). A Phase I Investigation was completed in 1983 and an investigation was carried out at the end of 1988. Soil samples collected inside the pit showed high levels of chromium and elevated levels of lead. Sediment from an onsite catch basin showed elevated metals concentrations. Sampling and analysis



of five off-site sewer samples showed no migration from this source. To further the investigation, up-gradient monitoring wells and four additional wells were installed. Sampling of the monitoring wells over one year showed groundwater exceedances for cyanide, benzene, ethylbenzene, toluene, xylene, and numerous poly aromatic hydrocarbons (PAH) compounds.

Table 1.1

Complete Substance Name (be specific) ⁽¹⁾	Specific Applicable OSHA Standard (if any)	Physical State ⁽²⁾ (S, L, G, Aq, Vap, F, P)	Max. Conc. Level Per Physical State ⁽³⁾	General Control Measures (Eng., Admin., PPE) ⁽⁴⁾
Acetone	2400 mg/m ³	L	82 ug/L	Eng., PPE
Acenaphthene	NA	S	790 ug/kg	Eng., PPE
Acenaphthylene	NA	S	3,200 ug/kg	Eng., PPE
Anthracene	0.2 mg/m ³	S	14,000,000 ug/kg	Eng., PPE
Benzo(a)anthracene	0.2 mg/m ³	S, L	3,100,000 ug/kg, 0.4 ug/L	Eng., PPE
Benzo(a)pyrene	0.2 mg/m ³	S	2,800,000 ug/kg	Eng., PPE
Benzo(b)fluoranthene	0.2 mg/m ³	S	3,200,000 ug/kg	Eng., PPE
Benzene	N/A	S, L	86,000 ug/kg, 84 ug/L	Eng., PPE
Benzo(G,H,I) perylene	1 ppm	S	1600,000 ug/kg	Eng., PPE
Benzo(k)Fluoranthene	NA	S	1,300,000 ug/kg	Eng., PPE
Biphenyl (Diphenyl)		L	31 ug/L	Eng., PPE
Bis(2-Ethylhexyl) Phthalate	NA	L	34 ug/L	Eng., PPE
Chrysene	0.2 mg/m ³	S	3,000,000 ug/kg	Eng., PPE
cis-1,2-Dichloroethene	0.2 mg/m ³	L	50 ug/L	Eng., PPE
Dibenz(a,h)anthracene	NA	S	460,000 ug/kg	Eng., PPE



Ethylbenzene	545 mg/m ³	S, L	1,700 ug/kg, 20.0 ug/L	Eng., PPE
Fluoranthene	NA	S	9,400,000 ug/kg	Eng., PPE
Fluorene	NA	S	4,400,000 ug/kg	Eng., PPE
Hexachlorocyclopentadiene	NA	L	50 ug/L	Eng., PPE
Indeno(1,2,3-Cd) Pyrene	NA	S	15,000,000 ug/kg	Eng., PPE
Naphthalene	50 mg/m ³	S, L	11,000,000 ug/kg, 1700 ug/L	Eng., PPE
Pentachlorophenol	0.5 mg/m ³	L	100 ug/L	Eng., PPE
Phenanthrene	0.2 mg/m ³	S	13,000,000 ug/kg	Eng., PPE
Phenol	19 mg/m ³	L	3.5 ug/L	Eng., PPE
Pyrene	NA	S	5,900,000 ug/kg	Eng., PPE
Toluene	200 ppm	S, L	83,000 ug/kg, 12 ug/L	Eng., PPE
Trichloroethene	100 ppm	L	5.9 ug/L	Eng., PPE
Total Xylenes	435 mg/m ³	S, L	120,000 ug/kg, 34 ug/L	Eng., PPE
Vinyl Chloride	1 ppm	L	5.4 ug/L	Eng., PPE
Arsenic	10 µg/m ³	L	920.0 ug/L	Eng., PPE
Barium	0.5 mg/m ³	L	4,900.0 ug/L	Eng., PPE
Beryllium	0.2 µg/m ³	L	11.0 ug/L	Eng., PPE
Cadmium	5 µg/m ³	L	16.0 ug/L	Eng., PPE
Chromium, Total	1 mg/m ³	S, L	37,600 ug/kg, 5,800 ug/L	Eng., PPE
Copper	0.1 mg/m ³	L	510.0 ug/L	Eng., PPE



Chemicals Brought On-Site

The use of chemical products onsite will follow the requirements set forth in OSHA 29 CFR 1910.1200 (OSHA's Hazard Communication Standard), applicable Federal, State and Local regulations and the project procedure provided in this HASP. The potential hazards associated with these products will be mitigated through site specific training, administrative controls (e.g. labeling and storage) and use of the prescribed PPE.

Safety Data Sheets (SDS) for all chemicals brought onsite, will be available for review in OSC's field office at the project site. Chemical products shall be labeled which shall include, product name, manufacturers name, hazard warning, identifier and hazard pictogram.

The following table provides exposure guidelines for common hazardous chemicals that may be brought to the site, if required, for use during this project. The HSO will be notified before any new chemicals (chemicals not listed on the below table) are brought onsite.

HAZARD SUMMARY FOR CHEMICALS BROUGHT ONSITE					
Substance	Route of Entry	Exposure Symptoms	Treatment	8 Hour TWA	STEL and IDLH
Diesel Fuel	<ul style="list-style-type: none"> •Skin contact •Eye contact •Inhalation •Ingestion 	<ul style="list-style-type: none"> •Harmful if comes in contact with or is absorbed throughout the skin. •Contact may cause skin and eyes irritation. •Prolonged or repeated exposure may cause liver or blood forming organ damage. •May cause skin irritation or dermatitis. 	<ul style="list-style-type: none"> •<u>Eyes</u>: Irrigate immediately. •<u>Skin</u>: Flush with soap and water. •<u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. •<u>Ingestion</u>: Seek medical attention. 	300 ppm	STEL: 500 ppm
Grease, Oil and Hydraulic Fluids	<ul style="list-style-type: none"> •Skin contact •Eye contact •Inhalation •Ingestion 	<ul style="list-style-type: none"> •May be slightly irritating to skin and eyes. •Inhalation may cause headaches. •Ingestion could result in nausea and vomiting. 	<ul style="list-style-type: none"> •<u>Eyes</u>: Irrigate immediately. •<u>Skin</u>: Flush with soap and water. •<u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. •<u>Ingestion</u>: Seek medical attention. 	N/A	N/A
Gasoline Petroleum Distillates	<ul style="list-style-type: none"> •Skin contact •Eye contact •Inhalation •Ingestion 	<ul style="list-style-type: none"> •Acute: Central nervous system effects. Chemical pneumonitis if aspirated into the lungs. •Chronic: Benzene is a confirmed carcinogen. Long term exposure caused kidney and liver cancer in rats/Chemical. 	<ul style="list-style-type: none"> •<u>Eyes</u>: Irrigate immediately. •<u>Skin</u>: Flush with soap and water. •<u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. •<u>Ingestion</u>: Seek medical attention. 	300ppm	500ppm STEL

HAZARD SUMMARY FOR CHEMICALS BROUGHT ONSITE					
Substance	Route of Entry	Exposure Symptoms	Treatment	8 Hour TWA	STEL and IDLH
Sodium Hydroxide	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • Irritation to eyes, skin, mucus membranes. • Swelling of larynx and accumulation of fluid in the lungs. • Stridor, vomiting, drooling, and abdominal pain are early symptoms of sodium hydroxide ingestion. Ingestion may lead to perforation of the gastrointestinal tract and shock. 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with soap and water. • <u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention immediately. 	2 mg/m ³	10 mg/m ³
Sodium Hypochlorite	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • Irritation to the skin and eyes with possible eye damage. • Can cause headache, dizziness, nausea, and vomiting 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with water. • <u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention. 	0.5ppm	10ppm
Sulfuric Acid	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • Irritation to the eyes, skin, nose, and throat. • Can cause pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatitis; dental erosion; and dermatitis 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with water. • <u>Inhalation</u>: Remove the victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention immediately. 	1 mg/m ³	15 mg/m ³

GENERAL PHYSICAL HAZARDS AND STANDARD PROTECTIVE MEASURES

Activity: *All General Work Activities* (manual ground laboring, operating equipment, supervising, inspecting).

Potential Hazard: noise, slips, trips and falls, struck by, pinched, falling debris, shock, heat/cold stress.

Procedures to Mitigate Hazard: Minimum standard site required PPE (Level D ANSI rated hard hat, eye protection, safety boots, high visibility traffic vest or equivalent clothing, cut/abrasion resistant gloves. Hearing protection (when “you need to raise your voice to hear yourself talk”) is required whenever using powered hand tools, when operating heavy equipment with no enclosed cab or near loud noise sources. Inspect work area for hazards, overhead power lines, obstructions, slip,



trip, fall hazards, uneven surfaces, and vermin. Manage work area; flag, mark, delineate and cover, identify with appropriate hazard warning signs. Clearly label open pits, wells and other fall hazards (soft barricade 15 feet back, hard barricade 2 feet back). Practice extreme caution in all work areas including vegetation covered areas. Watch footing during equipment access/egress and when moving through the work area, walk with purpose, pick feet up and setup down, keep hands out of pockets, use handrails, stay on designated paths, and don't take short cuts through the site. Avoid stepping or standing on uneven or unsteady surfaces. In high heat situations stay well hydrated. Personnel will adhere to the heat and cold stress precautions provided in this HASP. All employees have stop-work responsibility and authority for safety concerns.

Activity: *Manual Material Handling*

Potential Hazard: Strain, pinched, struck by, lacerations,

Procedures to Mitigate Hazard: Hands and feet clear of pinch points, standard site required PPE and gloves with hazard exposure (i.e., barrier gloves), Observe the OSC lifting program (50 lbs. maximum on this project). Use good body mechanics when lifting, lift objects with your legs and not your back, keep the back straight and object lifted the power zone. Do not twist, pick your feet up and turn. Utilize equipment whenever possible - forklift, drum cart or other appropriate equipment. Seek assistance if it is needed.

Activity: *General Traffic from Operations* (heavy equipment, trucks, pedestrian, etc.)

Potential Hazard: Struck by, crush, fire, and burn.

Procedures to Mitigate Hazard: Standard site required PPE. Traffic barricades and directional signs provide ground spotters/flagman equipment traffic, with high visibility, traffic vests or equivalent clothing. Minimum 35 ft. clearance from heavy equipment operations, leveling, compacting, separating, and loading out. Develop and implement a traffic control program when site activities occur adjacent to non-OSC vehicular traffic.

Activity: *Site Maintenance, Materials Storage and Housekeeping*

Potential Hazard: Slip, trip, fall, fire, burn, chemical hazards, eye, skin, struck by

Procedures to Mitigate Hazard: Personnel will properly store all equipment. Remove all scrap material from the work area and place it in designated storage/lay down areas for disposal. Delineate work areas and identify with appropriate Hazard Warning Signs. Handling of materials per products SDS and developed proper storage of all flammable and combustible materials; > 20 feet from ignition sources or protected with ½ hour fire barrier (indoors). Likewise, all flammable/combustible liquid will be segregated from the ignition source >20 ft. Store all hazardous materials in approved containers. Keep all solvent waste, oily rags, and liquids in fire resistant containers. One 20 lb. ABC Extinguisher should be provided in storage areas (within 75 ft. away no closer than 20 ft.).

Activity: *Operation of Hand or Power Tools*

Potential Hazard: Eye, hand, face, foot injuries, electrocution, noise, fire, burn.



Procedures to Mitigate Hazard: Tool use per Mfg.'s guidelines. Inspect tools before use; verify that guards and safety devices are in place before, during and after operation. Only use a power tool that you have been trained to use. Use GFCI plugged in at source for all corded tools. Red tag and remove all defective tools from service. Maintain and inspect the tools per the manufacturer's recommendations. All personnel will utilize the proper eye protection and hearing protection.

Activity: *Operating Heavy Equipment* (Excavators, Compactors, Dozers, Skid Steers, Rough Terrain Fork Trucks, Powered Aerial Platforms and Trucks)

Potential Hazard: Struck by, caught between, crushed, rollover, fire, burn.

Procedures to Mitigate Hazard: Equipment operation only by trained and authorized operators. Before use, any machinery or mechanized equipment will be inspected by a competent person and certified to be in safe operating condition. OSC will designate competent persons to be responsible for the inspection of machinery and equipment, daily and during use, to ensure its safe operating condition. Any machinery found to be unsafe will be dead lined; its use will be prohibited until the unsafe conditions have been corrected. Inspection of the machine/equipment will be conducted at the beginning of each shift, during which the equipment may be used, to determine that the brakes and operating systems are in proper working condition. All inspections will be documented. Only designated personnel, with appropriate training and authorization shall operate machinery and mechanized equipment. Any observed equipment deficiencies that will affect their safe operation will be corrected before continuing operations. A controlled work zone shall be established for demolition, sorting and loading operations. Likewise, a trained ground spotter shall be provided to assure personnel stay clear when an operator's rear view is obstructed. Dust control measures (active water misting during intrusive activities with water hose or equivalent misting equipment). Utilize the appropriate warning signs and backup alarms. All site personnel working near heavy machinery will use reflective clothing (i.e., vests) to alert the operator of their whereabouts. See appropriate AHA for details (hoisting, heavy equipment operation, etc.).

Activity: *Excavating and Working in Excavations*

Potential Hazard: Cave in, collapse, chemical exposure, struck by, entrapment.

Procedures to Mitigate Hazard: Per OSHA requirements, provide protective systems of trenches when deeper than 5 feet and entry is necessary. Inspect the excavations/trenches regularly for changing conditions. Ensure that the material from the excavations/trenches is being placed away from the edge, to prevent cave-ins and pit (instability (> 2 feet back). Backfill the excavations as required by the approved contract requirements, to minimize the number of open excavations and control zones.

All excavation work shall be supervised by a competent person who will determine what protective measures are required, what those controls will be and how they will be implemented (testing, monitoring, benching, sloping, shoring, means of egress, dewatering, etc.). The competent person will inspect the excavations and controls to ensure reinforced structures are barricaded or marked, with barricade tape or traffic cones, during active excavations. If an excavation must remain open prior to backfill, those excavations must be fenced or barricaded (> 6 ft. from edge). Compliance with OSHA 29 CFR 1926 Subpart P will be maintained.



Atmosphere monitoring will be conducted prior to entry and during work activities in excavations/trenches.

Activity: *Working Around or Near Utilities* (Utilities hazards overhead and or underground)

Potential Hazard: Stored Energy Hazards (electrical, gas, water, sewer, etc.)

Procedures to Mitigate Hazard: Request utility mark out, notify FPO utility authority a minimum of three days prior to performing any intrusive or demolition activities. Prior to work beginning, ensure that all utility lines are not energized. Stay a minimum of 10-feet away from energized lines.

Activity: *Servicing Equipment*

Potential Hazard: Uncontrolled release of hazardous energy (electrical, mechanical, kinetic, pressure, heat, chemical, any type of stored or potential energy).

Procedures to Mitigate Hazard: The lock-out/tag-out procedure provided in this HASP will be followed when working on machines and equipment in which the unexpected energizing / start-up of the machines or equipment, or release of stored energy could cause injury to employees.

Activity: *Working from Elevated Heights (> 6 feet) with an open edge to the next lowest.*

Potential Hazard: Fall

Procedures to Mitigate Hazard: All work from elevated heights shall be performed as supervised by a competent person. In all cases proper fall protection shall be utilized, use personal fall restraint systems, and maintain 100% tie-off.

Activity: *Demolition of Structures and Tanks*

Potential Hazard: Unintended explosion, crush, premature collapse, propelled debris, contamination spread (i.e., asbestos, silica).

Procedures to Mitigate Hazard: Only qualified, competent personnel to oversee and manage demolitions (mechanical and energetic). Engineering Survey to be completed for each building prior to start of demolition to ensure utilities have been air gapped and all hazardous, and universal waste has been removed. Maintain strict control over entry/egress of well demarcated work and exclusion zones. Extended buffer zone to be established and maintained around all demolition. JHA for demolition work has been completed, reviewed, and signed off by designated work crew.

BIOLOGICAL HAZARDS

Bites and Stings

Animal bites, such as from coyotes, or stings which are usually irritants that cause localized swelling, itching and minor pain and can be handled with first aid treatment. The bites of certain snakes, lizards and spiders can contain sufficient poison to warrant medical attention. Diseases that may require medical attention can be transmitted from some animal bites. Examples are rabies (mainly from dogs, skunks, racoons, and foxes), Lyme disease (transmitted from ticks) and encephalitis (transmitted from mosquitoes).



Personnel with known allergic reactions to bee stings should carry the appropriate medication and must notify the Director HS&E and HSO of his/her condition prior to reporting for work at the site.

Ticks, Chiggers and Lyme disease

Ticks and chiggers may be present in vegetated areas during the spring, summer and fall seasons. Preventative measures include protective clothing that covers the entire body, tucking pant legs into boots or socks and tucking a long-sleeved shirt into pants; head/hair protection; and the use of insect repellent containing DEET on all exposed areas and coveralls. Project personnel should check their bodies thoroughly for ticks and should bathe soon after returning home. Remove any ticks carefully, using a gentle firm, tugging motion with fine tweezers. If site employees feel they have been bitten, they should notify the HSO immediately.

Snakes (WNY has no poisonous snakes)

If project personnel encounter a potentially dangerous snake – stop work, remove yourself and other workers from the immediate area and notify the Superintendent. The supervisor will contact an appropriate site representative to request that the hazard be removed. Do not re-enter the work area until you have been cleared by the HSO to do so.

Toxic Plants

Poison Ivy, poison sumac and poison oak may be present during the spring, summer and fall seasons. Avoid contact with these plants. If a project worker has come in contact, the affected area should be washed thoroughly with soap and cool water. Notify the HSO immediately.

Bloodborne Pathogens

29 CFR 1910.1030 requires that all first aid responders who may encounter potentially infectious materials be trained and protected from exposure. Furthermore, there is a risk for any site employee to be exposed to discarded needles and/or contaminated sharps.

All employees on this project will.

- Avoid contact with any blood or potentially contaminated object.
- Use caution when picking up or moving objects (stones, brush, debris, etc.).
- Wear leather gloves and do not touch suspect objects.

In addition to the above requirements, the following will apply.

- All personnel will be required to receive bloodborne pathogen awareness training.
- No eating, drinking, smoking, or applying lip balm will be permitted in the designated work area, decontamination area, and first aid area.
- First aid kits will be equipped with the proper PPE and supplemental kits will be supplied with barrier protection devices (i.e., gloves, CPR shields and respirators).



- If a garment (gloves included) is contaminated by blood or other potentially infectious materials, the garment(s) will be removed as soon as possible.
- After an exposure incident, a confidential medical evaluation and follow-up will be conducted and made available to the employee immediately upon receipt. The HSO will coordinate all medical arrangements.

Radiological Hazards

No radiological hazards are expected during this project.

SITE SECURITY

All onsite personnel and visitors will be required to sign-in and sign-out, at the guard shack and are to check in at the project field office, before entering designated work sites. OSC will maintain, onsite, all records of site access. Visitors will be required to be knowledgeable of and conform to this SSHASP prior to accessing work zones. Vehicular traffic will be permitted in the designated parking area as permitted by the owner. Access to the controlled work and traffic zones is restricted to authorized vehicles only.

SITE LAYOUT

See project specific work plans prepared separately and maintained in the office.

BUDDY SYSTEM

Working alone is prohibited. All field personnel will be assigned a co-worker who will watch for hazards or problems his/her co-worker might encounter. Communication between employees must be maintained always. Workers will pre-determine hand signals, or other means of emergency signals, for communication when respiratory protection or distance makes communication difficult. Visual contact must remain between the two co-workers; they must remain near each other in order to assist in case of an emergency.

SITE COMMUNICATIONS PLAN

Each work crew, operator and manager will be equipped with a two-way radio. In the event of an emergency, and two-way radio communication is not available, oral and visual safety signals have been established to protect project personnel. These signals will be presented to personnel for all phases of operation before conducting any task. These safety signals will ensure quick communication during adverse or emergency situations. Examples of established signals, and their meanings, are provided below.

Visual Signal	Indication
Hand gripping throat	Out of air, can't breathe
Wave hands over head from side to side	Attention: stand by for next signal

Swing hands from the direction of person receiving the signal to directly overhead and through a circle	Come here
Pointed finger with extended arm	Look in that direction
Grip partner's wrist with one or both hands	Leave the area immediately
Hand on top of head	Need assistance
Thumbs up	Ok, I'm alright, I understand
Thumbs down	No, negative
Audio Signal	Indication
Short blast of air or vehicle horn	Caution look here
Three long blasts of air or vehicle horn	Leave the area

PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE will be selected, used, maintained, and stored in accordance with OSHA 29 CFR 1926 Subpart E, and applicable manufacturer recommendations. Engineering, administrative and/or work practice controls to minimize hazards will be implemented where feasible, followed by PPE.

MINIMUM LEVELS OF PROTECTION

Level D personal protective equipment that is to be worn always by project personnel at the site includes.

- ANSI approved safety glasses with side shields.
- Leather safety boots (ANSI or ASTM)
- Rubber boots w/wet hazards or disposable booties as required per task.
- Hardhat (ANSI Rated)
- High visibility vest or equivalent high visibility clothing
- Appropriate clothing (long sleeve shirts and pants) and Tyvek coveralls as required per task.
- Gloves (leather always), nitrile as required.
- Hearing protection (around powered equipment or using powered hand tools)
- Tick protection when grubbing.

Modified D PPE will be used when the possibility of dermal hazardous chemical contact, but not inhalation exposure exists and includes.

- The above minimum PPE
- Mono-goggles with face shield in chemical splash situations
- Impermeable chemical barrier gloves (i.e., nitrile) if handling contaminated material
- Coated disposable coveralls (Tyvek or equivalent) if exposure to hazardous chemicals exists.
- Face shield and safety glasses with work where the potential for flying debris hazards is present (i.e., chipping, grinding, steel on steel impact activities)

Level C PPE will be used if there is the possibility of inhalation of hazardous concentrations (or unknown concentrations) of vapors or fumes at or above OSHA PELs. Level C PPE includes:



- Modified level D PPE
- Air purifying respirator (half-face)
- Appropriate filtering media (particulate, mercury, organic, or combination cartridge)

NOTE: OSC employees are given the option of using an air purifying respirator for voluntary use.

Level B is not anticipated for this project but may be made available if necessary.

Levels D and Modified Level D are the anticipated PPE during this project. These minimum levels of protection are considered preliminary and may change based upon initial exposure assessment and routine assessments as work progresses. No change to the specified level of protection will be made without the approval of the HSO and in agreement with the Director HS&E.

SELECTION OF PROTECTION LEVELS

PPE will be used when project and support activities involve known, or suspected, contamination; when vapors, gases or particulates may be generated by site activities; or when direct contact with skin may occur. Respirators protect the lungs against airborne toxicants. Chemical resistant clothing protects skin from contact with harmful and absorbable chemicals.

Level D: Protection will be used when no airborne contaminant exposure is likely and job functions do not require the use of respiratory equipment or chemical resistive clothing. The equipment for this level of protection is described above and is expected to be the minimum for the project.

Level D Modified: Protection will be modified when additional contact hazards have been identified such as splash hazards and contaminated or nuisance dust. See the description above.

Level C: Protection that will be provided when airborne contaminants have been identified and which requires the use of air purifying respiratory equipment to keep exposures below health-based limits. Examples of respiratory protection for this project are half or full-face air purifying respirators with appropriate cartridges (i.e., P-100 cartridges for lead particulate, Black Organic Vapor – VOC, Brown/Gold Acid Gas, etc.). Likewise, excavation work may require an approved P100/vapor combination cartridge.

Level B: Protection that will be provided when the highest level of respiratory protection is needed with partial body or skin protection. Equipment for this level of protection will include a minimum of the following:

- SCBA, PAPR or airline respirator depending on the contaminate and situation.
- Chemical resistant protective clothing for hazards identified.
- Hardhat or helmet for hazards identified.
- Chemical resistant gloves with liners for hazards identified.
- Chemical resistant safety shoes or boot covers for hazards identified.

Level B is not expected for this project.



HEARING PROTECTION

Project personnel will be provided hearing protection and required to use it whenever conducting tasks where exposures may exceed 90 dB as indicated in the following table:

Equipment	Sound Level at Operator		
	Average, dB	Range	TWA, dBA
Earth Moving:			
Front End Loader	88	85-91	
Backhoe	86.5	79-89	
Bulldozer	96	89-103	
Roller	90	79-93	
Scraper	96	84-102	
Excavator	86	83-92	89.6*
Truck	96	89-103	
Paver	101	100-102	
Power Units:			
Generators	<85		
Compressors	<85		
Impact:			
Pile Driver (diesel/pneum.)	98	82-105	
Pile Driver (gravity)	82.5	62-91	
Pneumatic Breaker	106	94-111	
Hydraulic Breaker	95.5	90-100	
Pneumatic Chipper	109		
Other Equipment:			
Compactor/Vibrator	94.5	85-98	86.1
Compressed Air Blower	104		
Power Saw	88.5	78-95	
Electric Drill	102		
Noise Standards		Noise Level	
OSHA (at worker's ear)		90 dB (A) TWA	
Day Time Community (at property line)		65 dB (A)	
*Open windows			



OSC has monitored sound levels for various tasks and operations conducted during the project to verify that the levels cited above are accurate and to serve as exposure indicators. Sound levels have been measured for each task or operation reasonably expected of having noise levels that could result in exposures above 90 dB as an 8-hr. TWA. Regardless of the results however, OSC employees will be required to use hearing protection under pre-defined conditions.

Hearing protection will be required whenever an employee is either using a powered tool or working near loud noises (excavators, sheet driving, or working in heavy equipment with windows open). Hearing protection may be obtained from the HSO. Each employee is responsible for wearing hearing protection when required. Replacements may be obtained from the HSO, if necessary. Employees are encouraged to use hearing protection voluntarily if communications are not compromised.

RESPIRATORY PROTECTION

Project personnel may be required to use respiratory protection to reduce their exposure to airborne hazardous substances. The standard requirements that determine the selection and use of respirators depend on the hazards present. Respirators will also be made available, at the project office, for emergencies.

Only respirators that are approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupation Safety and Health (NIOSH) are allowed. Use must follow the regulatory requirements set forth by OSHA 29 CFR 1910.134 and OSHA 29 CFR 1926.103.

OSC employees may voluntarily use a filtering facepiece in conditions when respiratory protection is not mandatory. Employees that are medically cleared to use an APR may wear any type of respirator voluntarily.

Medical Clearance & Fit Testing

All personnel that are assigned to tasks where a respirator is needed, must have prior medical clearance. Medical evaluations and fit testing are provided by OSC. Fit test records and all project personnel medical documentation will be filed and maintained onsite, by the HSO.

Medical limitations and restrictions will be strictly enforced. No employee will be permitted to use a respirator if he/she has any facial abnormality or facial hair that may affect the fit or seal of their respirator.

Training

All personnel who are required to wear a respirator will receive training (in addition to required annual training) from the HSO on the use, maintenance, proper care, and inspection of their respirators. Attendance at all training will be documented. Attendance records will be maintained onsite by the HSO and will be available for inspection upon request.



Inspection

All respirators to be used at the jobsite will be inspected for damage by the employee, prior to use. After they are trained, every employee will be responsible for the inspection of their own respirator. The following elements will be inspected:

- Tightness of the connections
- Face piece
- Headbands
- Inhalation valve
- Cartridge or filter fittings
- Signs of deterioration

Any malformation, distortion, missing parts, cracks, etc. in the respirator will cause the equipment to be deemed useless until a qualified technician can properly repair the respirator. If necessary, a new respirator will be issued.

Respirator Type

The type of respirator, and who is required to wear them, will be identified on a task specific level by the HSO, in consultation with the Director HS&E, based on the type of work that will be performed and the potential for exposure to airborne contaminants.

Standard Procedure for Use

All personnel will adhere to the following standard operating procedure for respirator use:

- Carefully inspect the respirator prior to entering potentially contaminated work areas.
- Conduct positive and negative pressure leak tests each time the respirator is to be used.
- Do not remove the respirator in contaminated work areas.
- Wear a respirator with straps inside disposable garment hood (if equipped)

Cleaning and Disinfecting

Any reusable respirator must be cleaned after each use. The steps required to clean a respirator after use are:

- Remove the cartridge and headbands.
- Disassemble all respirator parts.
- Wash all parts, except for the cartridge and headband, in a cleaner-disinfectant solution or use soap and hot water.
- Rinse all parts completely in clean, warm water.
- Air dry in a clean, sanitary area
- Re-assemble the respirator.
- Store the cleaned respirator in a sealed bag.



Storage

Respirators will be stored in a sealed bag to protect against dust, sunlight, extreme temperature, moisture, and abrasives. Inhalation holes will be covered with duct tape immediately after leaving a contaminated area. The tape will be left on until the respirator is donned for the next entry into a contaminated area. This tape will prevent any contaminants from being dislodged from the cartridge. Respirators should be stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastic setting in an abnormal position. The respirator should not be hung to store or air dried by its straps.

STANDARD OPERATING PROCEDURES (SOPs)

GENERAL

- Ensure that all safety equipment and protective clothing is kept clean and well maintained.
- Ensure that all prescription eyeglasses are safety glasses and are compatible with respirators.
- Ensure that all disposable or reusable gloves are approved by the HSO.
- Respirator filters will be inspected daily.
- At the end of each day, decontaminate or dispose of all PPE used onsite. The HSO is responsible for ensuring decontamination before PPE reuse.
- Project personnel will have vision or corrected vision to at least 20/40 in one eye.
- Onsite personnel that are found to be disregarding any provision of this HASP will be barred, at the request of the HSO, from this project.
- Do not reuse disposable outerwear such as coveralls, gloves, and boots. Used disposable outerwear will be removed upon leaving the exclusion zone and placed inside disposable containers that are provided for this sole purpose. The containers will be stored at the project site, at the designated staging area, and OSC will arrange for the proper disposal of these materials at the completion of the project.
- When working, immediately replace protective coveralls that have become torn or badly soiled.
- Eating, drinking, smoking, chewing gum and tobacco use shall be in designated areas.
- All personnel must thoroughly wash their hands, face, and forearms prior to using the facilities, eating, drinking and smoking.
- NO alcohol, drugs (without prescriptions) or firearms will be allowed onsite at any time.

All personnel who are on medication with a safety-sensitive affect will report it to the HSO, prior to work start-up, The HSO will require a letter from the individual's personal physician stating what limitations, if any; the medication may impose on the individual.



EXCAVATION SAFETY

OSC maintains strict procedure for soil excavations. The safety of all employees during these operations depends on the soil structure and stability, contamination, weather conditions, buried utilities and structures and superimposed loads.

When excavating within a wet, sandy area, or if the area has been backfilled at any time, it is likely to be very unstable. All personnel working in these conditions must be cautious and provide extra sloping, if possible. A change in weather conditions, such as heavy rain or snow, can loosen the soil and increase the risk of a collapse. If the area of excavation is prone to collapse precautions, such as covering the area, should be taken. Heavy equipment or materials should be kept as far away as possible from the excavation area because they can also increase the risk of collapse. All excavated soil should be removed from the rim of the area and contained if possible.

An excavation competent person must be on site anytime entry into an excavation is necessary. Any person entering an excavation must be trained in the hazards and safe work practices of excavations.

To eliminate the impact on buried pipelines or cables before any excavation begins OSC personnel will notify all utility companies to locate their lines. If such a hazard exists, the lines will be carefully marked (potting, hand digging, etc.) prior to the start of the excavation activities.

When deeper than five feet, to prevent collapsing soil the excavation must be sloped, shored, or somehow contained before any personnel may enter. A ladder will be provided for employees who are working in depths of more than four feet and spacing between will not exceed 25 feet. The ladder will not be removed until all employees have exited the excavation site.

All excavation sites will be inspected daily by an OSC designated competent person. All activity will cease if the competent person, site superintendent, and/or the HSO find the site hazardous. The competent person will make an inspection any time there is a change in conditions (i.e., weather, water, heavy equipment operation, etc.).

EXTERIOR PRECAUTIONS

OSC requires that all exterior structures (sidewalks, bridges, etc.) be protected and clear of excavated materials. Sidewalks will be shored to carry a load of at least 125 pounds/sf. Planks, which are being used for temporary walkways, will be laid parallel to the length of the walkway, and will be fastened together. If possible, guard rails or fences will be erected to protect employees and vehicle traffic from the edge of excavation sites.

LOCKOUT/TAGOUT POLICY

For repairs or maintenance, equipment will be locked out. This procedure ensures the health and safety of all personnel by deactivating any movable, electrical or pressurized equipment. This policy applies to all machinery or equipment that can be moved either using electrical power, hydraulic



power, compressed air, steam, or energy stored in springs/suspension devices. Damaged tags will be placed on all movable equipment and machinery.

Only project personnel and supervisors are authorized to lockout machinery/equipment. Every employee is responsible for his/her own equipment and nobody else is permitted to remove a lock or tag except the authorized employee. Any violation of this policy is cause for strict disciplinary action.

Lockout Procedures

Lockout devices are used to prevent the accidental re-energizing of equipment.

De-energizing Circuits and Equipment: Disconnect the circuits and equipment, to be worked on, from all electrical sources and release stored energy that could accidentally re-energize equipment.

Application of Locks and Tags: Only authorized personnel are allowed to place a lock and tag on each disconnecting – means used to de-energize the circuits or equipment before the work begins. A lock prevents unauthorized personnel from re-energizing the equipment or circuits. A tag prohibits unauthorized operation of the disconnecting device.

Verification of De-energized Condition of Circuits/Equipment: Prior to work on equipment, OSC requires that a “qualified” employee verify that the equipment is de-energized and cannot be restarted. This is typically done by a visible break in the conductors (i.e., air gap) of one foot or more.

Re-energizing Circuits and Equipment: Before circuits or equipment are re-energized, the following steps must be taken in the following order:

- A “qualified” employee conducts tests and verifies that all tools and devices have been removed.
- All exposed employees are warned to stay clear of the circuits and equipment.
- Authorized personnel will remove their own locks and tags.
- The HSO will conduct a visual inspection of the area to be sure all employees are clear of the circuits and equipment.

ELECTRICAL

Only qualified and authorized personnel may work on or around electrical equipment. OSC personnel are not permitted to work on energized lines or equipment. Live or hot work must be contracted to a qualified third party unless specific authorization is given by the OSC President or Director HS&E. The following shall be observed:

- The working space around all electrical equipment will be large enough to permit access to all parts of the equipment. The working space will never be used for the storage of other materials so that immediate access can be gained.
- Only NEC certified electrical tools may be used.



- A ground fault circuit interrupter (GFCI) shall be utilized with all portable electric tools; plugged in at the source and tested prior to use. All electrical equipment shall be properly grounded or guarded (double insulated tools, GFCI).
- Single phase electrical tools must be plugged into properly grounded receptacles.
- The use of extension cords is discouraged. If their use is necessary, extension cords must never be used in traffic areas where they may be a hazard, or where they may become unplugged. Extension cords will always be grounded.
- Any energized electrical equipment, operating at 50 volts or higher, must be protected by a cabinet or other approved enclosure with warning signs that are immediately visible.

FALL PROTECTION

All work from elevated heights > 6 ft. with an open edge to the next lowest level shall be performed as supervised by a competent person. In all cases proper fall protection systems shall be utilized as determined by the competent person for fall protection; restraint systems (PFRS, guard rails, and warning lines (restricted for unprotected edge work where traditional systems are not practical).

Whenever possible, fall restraint shall be used over fall arrest.

OSC observes a policy of 100% tie-off at all times.

INCIDENT PREVENTION PROCEDURES

SAFETY TASK ANALYSIS CARD

The Safety Task Analysis Card (STAC) process is a required component of all OSC projects. The STAC is a pre-printed, bi-fold card that must be completed by each employee at least once per week. The card is used by the employee as a reference tool throughout their work shift. STAC card observations are used to address new work tasks and/or potential hazards.

STAC's are used in addition to safe work permits and/or approved work procedures. The STAC is designed to be an ongoing learning tool. By breaking jobs into small parts, workers can identify hazards and eliminate or control them. It is intended as a tool to help employees make observations and correct fellow employee at risk behaviors.

The STAC must be completed by each employee at least once per week. This is the minimum requirement. Project personnel found participating in or observing risky actions without submitting a properly completed STAC will be re-trained on the need to do so.

Project supervisors and/or the HSO will review submitted STACs with employees during tailgate safety meetings and identify corrective actions.



FIRE PREVENTION and PROTECTION

Emergency response and contingency procedures provided this SSHASP will be in effect throughout all phases of work. Included are firefighting equipment, alarm systems, the location of the closest fire departments and procedures for handling fire emergencies. Firefighting equipment will be inspected on a regular basis, maintained in proper working order, and will be in an accessible place on the site, at all times.

All heavy equipment will be equipped with a fire extinguisher unless doing so would create an undue hazard in operation or inspection of the equipment, typically this occurs only on small equipment such as a skid steer.

Fire extinguishers will be immediately available when working with or near combustible or flammable items.

A fire extinguisher, rated 2A or greater, will be provided for every 3,000 sf of protected building area, or major fraction thereof, on every floor and they will be placed no more than 100 feet from any point within the building. Fire extinguishers will be placed adjacent to stairways in multi-story buildings. This condition is not expected on the project.

SITE HOUSEKEEPING

The following housekeeping guidelines apply at this site:

- All excess material and debris will be kept clear from all working areas.
- Combustible materials will be removed at regular intervals and all wastes will be properly disposed of at frequent intervals.
- Containers will be provided for the collection and separation of all discarded materials and refuse. Covers and identification will be provided for all containers used for flammable or harmful substances.

MECHANICAL EQUIPMENT

The following guidelines apply when dealing with the inspection and operation of all mechanical equipment:

- All vehicles and equipment used on the site must be checked at the beginning of each shift to assure that all parts that affect safe operation are in proper working condition and are free from defects. An inspection form must be completed and filed with the HSO.
- Personnel will not be permitted to operate equipment when there is an obstructed view to the rear or sides unless there is a spotter.
- Employees will not work or walk under or between any equipment that had parts which are suspended or held aloft unless/until the parts are substantially blocked to prevent falling and shifting.



- Hydraulic leaks must be addressed immediately by stopping the equipment, preventing further leaking and cleaning any hydraulic fluid spills/leaks. Notify the HSO immediately for proper corrective actions to be determined.

HIGH PRESSURE WASHERS

OSC requires that only trained and authorized personnel operate high pressure washers. This policy is intended to protect both OSC employees as well as any property where the equipment will be used. The following guidelines apply:

- The lance must always be pointed at the specific work area.
- Personnel will remain at least 25 feet away from the washer and the item being washed.
- Care should be taken to ensure the proper footing of the operator.
- The operator will wear the following personal protective equipment: Hard hat with face shield, goggles, safety boots with metal foot and shin guards, hearing protection, PVC rain or chemical resistant suit and heavy gloves; as well as any additional equipment to protect against chemicals, as needed.
- OSC requires that all operators be trained in the emergency shutdown procedures and general equipment maintenance of high-pressure washers.
- Under no circumstances will an operator be allowed to make modifications to a power washer.

VEHICLE and EQUIPMENT SAFETY

Only trained and qualified personnel may operate equipment and vehicles. This policy is intended to protect all employees and client properties. The guidelines for this policy are as follows.

- Each unit is to be inspected prior to its use on site, documented, and then inspected periodically depending on the equipment involved and the manufacturer's specifications.
- No repair work, or refueling, will be done while the vehicles or equipment are in operation. The engine is to be turned off and all buckets, blades, gates, or booms must be lowered to the ground, or a substantial support.
- Equipment backup alarms must be operational and audible over the surrounding noise levels. If this is not the case, an assistant must be assigned to the operator, and he/she will be required to clear the way.
- Only authorized personnel are permitted to ride in company vehicles and equipment.
- Under no circumstances will an employee be permitted to get on or off a moving vehicle.
- Operators must wear the following PPE: Boots/sturdy work shoes, ear protection devices when the noise level is excessive (see hearing protection section), heavy work gloves. Hardhats and safety eyewear with side shields are required whenever outside of an enclosed cab. Safety glasses and hearing protection are required when cab windows are open.
- The operator must always wear seatbelts.
- To ensure the proper visibility all windshields, side windows, mirrors and lights will be cleaned as often as necessary.



Trucks

The following guidelines apply to truck operators:

- A current driver's license must always be carried.
- Drivers will check loaded material to ensure against loss or shifting during transit.
- All DOT regulations will be followed.
- When towing trailers, safety chains (grade 70) must be used.
- Non-OSC drivers must receive site-specific instructions upon arrival such as remaining in the truck, where to tarp loads, required PPE if allowed to exit truck, proper entry procedures, etc.

Heavy Equipment

OSC has the following requirements for operating front end loaders, excavators, dozers, and tractors:

- Prior to their use onsite, the equipment's brakes, cables and hoses must be checked and in good working order.
- When the equipment is moving, all blades, buckets and bowls will be carried close to the ground but high enough to avoid any obstacles on the ground. If not in motion, they must be lowered to the ground or to a substantial support.
- No employees are permitted to ride on a boom, bucket, bowl, or any other heavy equipment extension.
- All safety equipment must be properly installed, and in good working condition, before a piece of equipment is used on this project.

SANITATION

Except for mobile crews having transportation readily available, all work sites will have toilets provided that adhere to the following requirements: One toilet for 20 or less employees; one toilet seat and one urinal per 40 employees; if there are 200+ employees, one toilet seat and one urinal per 50 workers.

Adequate washing/showering facilities will be provided on site where there are harmful substances, and they will be near the site. An acceptable supply of potable water will be provided onsite, and it will be clearly marked as such. Portable water containers will have tightly sealed tops and a tap.

DAILY INSPECTIONS

The HSO will monitor jobsite hazard mitigation through inspections at the start and throughout each workday. Results of these daily inspections will be recorded in a daily safety log.

Any safety violations will be recorded and corrected by the Project Manager. All observed safety violations will be immediately corrected, explained to the person responsible, and reviewed at the next safety meeting. If an employee has excessive violations of the site safety rules, it will be



grounds for disciplinary action which could lead to; termination of OSC personnel or expulsion if an onsite subcontractor personnel.

INCIDENT REPORTING

OSC will prepare and maintain (on site) incident reports that include corrective actions. These reports will be provided within 48 hours of the incident if needed. Each incident report will be reviewed by the OSC Director HS&E. Verbal notification shall be within 2 hours.

Any occupational incident, which results in the death of one or more employees will be reported to OSHA within 8 hours. The inpatient hospitalization of an employee and all amputations or loss of an eye will be reported within 24 hours. All such incidents will be reported by OSC to the nearest OSHA Area Director during normal business hours or at the National Hotline (800-321-OSHA (6742)).

In addition to OSC's internal reporting requirements, requires all incidents (adverse events) to be investigated and based on the severity, requires notification of the incident within specified timelines. Adverse events are divided into three tiers: Tier 1 events are the most significant and serious events, followed by Tier 2, which are significant events but not as serious as Tier 1 events, and Tier 3 events are essentially all other events that do not meet the criteria for Tier 1 or Tier 2 events. Tier 1 events are to be reported within 2 hours, Tier 2 events are to be reported within 24 hours, and Tier 3 events are to be reported when possible.

Adverse events include the following:

Tier 1:

- A release to air, water or soil that has an actual or potential off-site adverse environmental impact.
- One or more on-site fatalities.
- Three or more employees, contractors, or visitors are admitted to a hospital.
- Any security incident that may be immediately dangerous to life or property, including fires, explosions, bomb threats, chemical release, radiation release, release of a biological or chemical agent (aerosolized or gaseous form).
- Government representatives alleging or suggesting criminal non-compliance of any kind.
- Receipt or notice of any regulatory agency directive or other type of injunctive device designed to curtail or restrict operations; and,
- Community injuries or diagnoses of illnesses allegedly associated with a company-related incident, event or release to air, water, or soil.

Tier 2:

- Employee or contractor lost workday injuries/illnesses.
- Employee, contractor, or visitor recordable injuries/illnesses.
- An environmental excursion that does not also trigger Tier 1 reporting.
- A release to air, water, or soil that only narrowly avoided an adverse environmental impact or had the potential to be an excursion.



- Discovery of potential or actual evidence of contaminated groundwater from current or former operations that does not otherwise meet the definition of a Tier 1 Event.
- Suspicious activities in or around 3821 River Rd. Inc. facilities or processes that may present a potential security risk.
- Allegations of previously unknown health/safety/environmental effects caused by products, processes, emissions, or discharges.
- Written notification from a governmental agency alleging non-compliance of any kind.
- Proposal or imposition of a HSER fine, penalty or corrective action.
- Receipt of a non-routine request for information from a governmental agency.
- A non-routine regulatory agency inspection.
- Audits (Peer review, Self-assessments, Third party findings and recommendations)
- Significant community activism or adverse media coverage not associated with an episodic event.
- A product recall imposed by a regulatory agency.
- Transportation-related events that result in Tier 2 impacts.
- Notice of an allegation from a third party or regulatory agency of environmental impacts from operations on current or formerly operated 3821 River Rd Inc facilities.
- Demands, including voluntary agreements, to conduct a site investigation or remedial measures to respond to environmental impacts from operations on current or formerly operated 3821 River Rd. Inc. facilities.

Tier 3:

- On-site or off-site employee, contractor employee or visitor injuries/illnesses where first-aid treatment or evaluation is provided by a Medical or Para-Medical Professional.
- A regulatory agency inspection (which is not a Tier 1 or Tier 2 Event and may still be underway) with no notice of fine, penalty or corrective action.

Adverse events must be reported to the PM, OSC Safety Director, and the INVENTUM engineering manager, as soon as possible following the event. All Tier 1 and Tier 2 adverse events must be investigated. A written OSC incident investigation report shall be completed within 48 hours.

MEDICAL SURVEILLANCE

MEDICAL EXAMINATIONS

OSC field personnel are provided with a thorough, initial medical examination to assess fitness for the project and to provide baseline health data for subsequent reference. Examinations are conducted by a qualified health care provider and repeated annually (unless abnormal test results, annual “questionnaire” answers or other problems dictate more frequent observation). A copy of the physician’s statement certifying each employee’s ability to work at task specific operations will be maintained in the project file by the HSO.

During the medical examination employees will be evaluated for their ability to wear respiratory protection. This evaluation will include, at a minimum, an examination of the cardiopulmonary



system; including forced vital capacity (FVC) and forced expiratory volume C 1 second (FEV 1.0). When indicated by the physician, other tests of the respiratory and cardiovascular systems will be performed on the basis of an individual’s past history, findings of the above below evaluation, and/or the type of equipment the individual may be required to use.

Following is an example of a baseline yearly medical examination:

Medical Monitoring Protocol				
Exam Components	Baseline	Annual	Interim	Exit
Vital Signs	Yes	Yes	Yes	Yes
Vision Screening (Includes Peripheral and Color)	Yes	Yes	Yes	Yes
Urine Drug Screen	Yes	Yes	As needed	As needed
DOT hearing	Yes	Yes	No	Yes
Spirometry	Yes	Yes	Yes	Yes
Chest X-Ray (asbestos work only)	Yes	3	No	3
Review of History	Yes	Yes	Yes	Yes
Physical Exam	Yes	Yes	Yes	Yes
Notes: Only do an X-ray if not done within the last 3 years For medical indications only				

NOTE: Any employee who develops a lost time injury or illness during the period of this contract will be evaluated by the OSC medical consultant. The project supervisor will be provided with a written statement that indicates the employee’s fitness and ability to return to work, signed by the medical consultant prior to allowing the employee to re-enter the work zone.

AIR MONITORING

Lower Explosive Limit (LEL) monitoring will be conducted around any tank, vessel, or barrel containing or may have contained flammable or volatile chemicals prior to beginning work each day and or when being handled. Concentrations greater than 10% of the LEL will result in work stopping immediately for further evaluation. When LEL concentrations are zero, the HSO shall determine the need for additional monitoring.

Volatile Organic Compound monitoring (breathing zone) shall be performed when odors are detected. Monitoring will be conducted using a MultiRAE Lite with a 11.7 lamp. Work resulting in readings of 0.6 ppm or greater TWA after 15 minutes of measurement shall stop and the OSC Director, HSE contacted for further evaluation.

Before a confined space is entered, the air shall be characterized using real-time monitors for oxygen content, LEL, and other potential hazards such as carbon monoxide or hydrogen sulfide exposure.

The need for additional air monitoring or exposure measurements will be determined as specific work tasks are developed. Air monitoring and sampling shall be specified in the relevant JHA as approved by the Director HS&E.



CONFINED SPACE ENTRY PROCEDURES

The following guidelines outline the minimum acceptable criteria that will be utilized by OSC and subcontractor personnel for all confined space entry operations.

All project specific confined space entries will be thoroughly reviewed by the designated HSO. Confined Space Permits shall be issued and approved in conjunction with the INVENTUM Project Manager. Personnel entering and working in confined spaces will be required to adhere to the OSHA Permit-Required Confined Space Standard 29 CFR 1926.1200 and the OSHA General Duty Clause. Affected project personnel are instructed in these OSHA regulations as part of the OSC employee training program.

The HSO will be responsible for reviewing the applicable entry protocol with the field team, prior to confined space entry.

DEFINITIONS

CONFINED SPACE: There are two types of confined spaces: permit required, and non-permit required. OSHA's "PRCS Evaluation Procedures and Decision Flow Chart" will be used to evaluate the potential for permit required confined space.

PERMIT REQUIRED CONFINED SPACE (PRCS): The space contains, or has the potential to contain:

- A hazardous atmosphere. A hazardous atmosphere is defined as any space where the oxygen is below 19.5% or above 23.5%, combustible vapors are above 10% LEL, or high toxic concentrations are present which may cause death, incapacitation or an impaired ability to self-rescue.
- The space contains a material that may engulf an entrant.
- The space has an internal configuration that may trap or asphyxiate entrants.
- The space contains any other serious health, safety or environmental hazard.

NON-PERMIT REQUIRED CONFINED SPACES: OSHA defined a non-permit required confined space as a PRCS in which all serious hazards have been eliminated. Non-permit required confined spaces will be re-evaluated by the HSO using the "PRCS Evaluation Procedure and Decision Flow Chart" (see attached) whenever they or their characteristics change in a way that could lead to reclassification as a PRCS.

PERSONNEL RESPONSIBILITIES



Entry Supervisors

OSC will designate an entry supervisor to oversee the confined space entry and ensure that personnel engaged in PRCS entry operations will comply with this procedure. Entry supervisors will:

- Verify that all tests specified by the permit have been conducted and that all procedure and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Terminate the entry and cancel the permit when the entry operations covered by the entry permit have been completed, or whenever a condition that is not allowed under the entry permit arises in or near the PRCS.
- Verify that rescue services are available and that the means for summoning them are operable.
- Remove all unauthorized individuals who enter, or attempt to enter, the PRCS during entry operations.
- Determine that the entry operations are consistent with the terms of the entry permit and that acceptable entry conditions are maintained.

Attendants

The entry supervisor will designate a qualified attendant for each PRCS operation. To be qualified, an attendant must know the hazards that authorized entrants may encounter during an entry (including information on the mode, signs and symptoms, and consequences of exposure) and must be aware of the behavioral symptoms of hazard exposure. Attendants will:

- Remain outside the PRCS during entry operations until relieved by another attendant.
- Warn all unauthorized entrants that they must stay clear of the PRCS, or that they must immediately exit if they have entered the PRCS.
- Inform the entry supervisor, if unauthorized personnel have entered the PRCS.
- Continuously maintain an accurate count of entrants in the PRCS and ensure that the means used to identify authorized entrants accurately identifies the entrants.
- Communicate with authorized entrants, as necessary, to monitor entrant status and to alert entrants of the need to evacuate the PRCS.
- Monitor the activities both inside and outside the PRCS.
- Immediately order evacuation of the PRCS if a prohibited condition is detected, the behavioral effects of hazard exposure in an authorized entrant are observed, or a situation outside the PRCS is found that could endanger the authorized entrants; or if the attendant cannot effectively and safely perform his/her duties and responsibilities.
- Perform non-entry rescues, as specified by the Confined Space Entry Permit; summon rescue and other emergency services as soon as it is determined that authorized entrants may need assistance to escape from PRCS hazards.

Attendants will NOT, under any circumstances:



- Perform any duty that might interfere with their primary duty to monitor and protect the authorized entrant.
- Enter the PRCS for rescue purposes.

Entrants

Authorized PRCS entrants will be identified on each Confined Space Entry Permit. Authorized entrants will:

- Know the hazards, including information on the mode, signs or symptoms, and consequences of exposure.
- Properly use the PPE provided for the PRCS entry.
- Communicate with the attendant, as necessary, so the attendant can monitor entrant status and alert entrants of any need to evacuate the PRCS.
- Evacuate the PRCS and alert the attendant whenever they recognize any warning signs or symptoms of exposure to a dangerous situation; or they detect a prohibited condition; or whenever the attendant or entry supervisor orders the evacuation; or when an evacuation alarm is activated.

TRAINING

All project personnel will be instructed not to enter PRCSs without the proper permit and without following the procedure and practices outlined in this SOP and in the Confined Space Entry Permit. Personnel, who are required to enter a PRCS, or act as an attendant or entry supervisor, will be trained to acquire the understanding, knowledge and skills necessary for the safe performance of their assigned responsibilities and duties.

Entrants will receive training on:

- The means and methods used to communicate with attendants; as well as the means attendants will use to notify them of emergencies.
- The operation of any specialized equipment that is expected to be used, including monitoring and rescue equipment.
- Evacuation signals and procedures; as well as the need for entrants to notify the attendant and evacuate the PRCS if they detect any dangerous conditions.

Attendants will receive training on:

- The procedures for monitoring inside and outside the PRCS and recognizing the conditions that might be hazardous to entrants.
- Procedures for communicating with entrants.
- Procedures for evacuating entrants from the PRCS and when evacuation is required.
- Procedures for controlling access to the PRCS.
- Their responsibility to remain outside the PRCS during entry, unless they are relieved by another attendant.
- Non-entry rescue procedures.



Entry Supervisors will receive training on:

- Verifying that the Confined Space Entry Permit has been completed properly.
- Procedures for verifying that all tests specified by the Permit have been conducted.
- Requirements for verifying that all the procedures and equipment specified by the Permit are in place before allowing entry to begin.
- Procedures for determining if conditions are acceptable for entry.
- Authorizing entry operations, and
- Terminating entry.

Confined Space Training will be conducted:

- Before the employee is first assigned confined space duties.
- Before a change in assigned duties.
- Whenever there is a change in permit space operations that presents a hazard about which employee has not previously been trained, and
- Whenever project management, involved regulatory officials, or the project engineer has reason to believe that there are inadequacies in the knowledge or use of these procedures.

When complete, training will be certified by the instructor. The certification will list the names of the personnel presenting and receiving training and the dates of training. Training certification documentation will be maintained as part of the Project file kept at the site and in the individual's personnel files in the home office.

PRCS ENTRY PROCEDURE

Atmospheric Testing

Before an employee enters any confined space, the entry supervisor will test the internal atmosphere with a calibrated, direct reading instrument to determine if acceptable entry conditions exist for the following conditions, in the given order:

<u>Condition</u>	<u>Acceptable Parameter(s)</u>
A. Oxygen Content	Above 19.5% and Below 23.5%
B. Flammable Gases and Vapors	Less than 10% LEL
C. Potential Toxic Air Contaminants	Below Action Levels for PPE

Continuous systems which cannot be isolated (i.e. sewers) or activities which generate significant airborne contaminants (i.e. welding) will be continuously monitored during entry, unless forced mechanical ventilation is used and has been shown to maintain an acceptable atmosphere.

Entry

The HSO will use the "PRCS Evaluation Procedures and Decision Flow Chart" to verify the presence of a PRCS. If it is determined that a PRCS does exist, the HSO will review the confined space entry procedures with entry personnel; post OSHA required danger signs at the entrances to the PRCS



and notify Project personnel of the PRCS location(s); notify offsite emergency response services of the PRCS; and prepare a Confined Space Entry Permit.

Confined Space Permit

The entry supervisor will be responsible for completing the Confined Space Entry Permit. All items on the Permit must be completed. The entry supervisor will verify that all entry personnel are aware of the specific hazards that are associated with the PRCS; that all necessary safety equipment and materials are in place; that all emergency response procedures are in place; and that the pre-entry air monitoring results indicate acceptable entry conditions, before signing the permit.

Pre-entry Briefing

The entry supervisor will conduct a pre-entry briefing with the attendants and authorized entrants to discuss the requirements of the Permit and to ensure that all involved personnel understand their responsibilities and the specific hazards associated with the PRCS. A pre-entry briefing will be conducted, for each attendant and entrant, prior to entry and whenever new hazards are identified.

Entry Authorization

The entry supervisor will sign the Confined Space Entry Permit after the Permit has been completed, all safety equipment is in place, air monitoring results are acceptable, the pre-entry briefing has been conducted and the rescue procedures have been established. Once the permit has been signed:

- Entrants will wear all necessary safety and rescue equipment.
- The Permit will be posted at, or near, the PRCS entrance, and
- Entry procedures will begin.

Permit Exit and Cancellation

Each Entry Permit will be valid for one shift only. Expired and canceled Permits will be returned to the Site Superintendent who will file them with the Project documents. Permits will be canceled if:

- A new hazard is identified or encountered.
- An entrant is seriously injured and requires evacuation and/or rescue.
- A change in the scope of work required new activities which may create previously unanticipated hazards that could cause serious death or injury.

RESCUE/EMERGENCY RESPONSE

Offsite Rescue and Emergency Services

Offsite rescue and emergency service personnel will be informed by the HSO of the hazards they may confront when called to the jobsite to perform services. These services will be identified and notified prior to any entry. Entry will not be performed if emergency rescue services are not available. The rescue/emergency service personnel will be provided access to all permit spaces



from which the rescue may be necessary, so that the emergency responders can develop appropriate rescue plans and conduct rescue operations.

Non-entry Rescue

Non-entry rescues, retrieval systems or methods will be used whenever an authorized entrant enters a PRCS, unless the retrieval equipment increases the overall risk of entry or would not contribute to the rescue of the entrant.

Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant’s back near shoulder level or above the entrant’s head. Retrieval lines will be attached to a mechanical device or a fixed point outside the Permit space, in such a manner that rescues can begin as soon as the rescuer becomes aware of the necessity. The mechanical device will be ready to retrieve personnel from vertical PRCSs more than five feet deep.

DECONTAMINATION PROCEDURES

Decontamination of equipment and personnel will be performed as necessary and as defined in the project scope. All equipment and personnel will be decontaminated before leaving the property.

Personnel and equipment decontamination procedures to be employed are summarized in the following subsections.

PERSONNEL HYGENE and DECONTAMINATION

Personnel will be made aware of any personal habit that may allow contaminants into or onto their body. All personnel will check that regularly worn PPE (i.e. hardhats and liners, eye protection, etc.) is clean and in good condition. A storage area for decontaminated PPE will be provided and used outside the contaminated zone. Any products used for personal consumption are prohibited in any work area. Break areas will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed.

A typical personnel decontamination sequence is presented below.

- Step 1: Scrape the gross contamination from boots and outer gloves. Wash them using soap in a water solution and rinse with water into a designated container in the contamination reduction zone.
- Step 2: Remove the tape from around boots and outer gloves and deposit in a collection drum (if disposable) or store on a rack (if reusable). Remove the over boots and outer gloves and place in a collection drum (if disposable) or wash and place on a rack (if reusable).
- Step 3: Remove respirator cartridge and place in a collection drum.
- Step 4: Remove disposable coveralls and place in a collection drum. Remove boots and store them in an appropriate location. Remove disposable inner gloves and dispose of them in a collection drum.

- Step 5: Remove hardhat and safety glasses: Decontaminate as necessary (wash with sanitizing solution [MSA sanitizing solution or equivalent], rinse with potable water and allow to dry at the end of each day).
- Step 6: Remove respirator, if used, and deposit in a plastic liner. Avoid touching your face with your fingers. Respirators will be washed in a sanitizing solution (MSA sanitizer or equivalent), rinsed with portable water and allowed to air dry at the end of each day.
- Step 7: Thoroughly wash and rinse any exposed skin with water and biodegradable soap using bucket 1. Rinse in bucket 2. Re-rinse in bucket 3. Shower and launder all personal clothing as soon as possible upon completing daily activities.

Personnel hygiene, hand and face washing, and following decontamination will take place in the project support area.

EQUIPMENT DECONTAMINATION

The HSO will be responsible for inspecting decontaminated vehicles, equipment and material contaminated work areas, to ensure proper decontamination. The users and HSO will verify that each piece of equipment utilized in the exclusion zone has been properly decontaminated.

Decontamination personnel will be required to use Modified Level D PPE as specified in this HASP. The standard operating procedure for the use of high-pressure washers, also provided, will be strictly followed to prevent injury.

HEAVY EQUIPMENT DECONTAMINATION

As a general practice, equipment, such as excavators, bulldozers, etc. will remain within the work zone for the duration of the excavation activities. This ensures the minimization of the potential migration of contaminants outside the project limits. In addition, the sequence of excavation has been designed to avoid the movement of machinery and personnel over areas within the work zones that have been excavated.

Generally heavy equipment, and large materials used in potentially contaminated areas equipment, will be decontaminated as outlined below:

- Conduct gross removal of solids at point use.
- Degrease as necessary.
- Move to the equipment decontamination pad for decontamination via pressure washing.
- Collect and handle resultant liquids/solids.

TOOLS and SMALL EQUIPMENT DECONTAMINATION

Tools and smaller equipment that may have come in contact with potentially contaminated materials will be decontaminated using the procedures outlined below:

- Flush and wipe components to remove debris and other gross contamination.
- Clean with potable water and non-phosphate detergent (i.e. Alconox or Liquinox) using a brush or high-pressure washer, as necessary, to remove particulate matter and surface films.



- Rinse thoroughly with potable water.
- Allow tools to air dry for a reasonable amount of time.

NON-DISPOSABLE SAMPLING EQUIPMENT

Non-disposable sampling equipment that may have come into contact with potentially contaminated materials will be decontaminated prior to collecting each sample as follows:

- Clean with potable water and non-phosphate detergent using a brush, if necessary, to remove all visible foreign matter.
- Rinse thoroughly with potable water.
- Rinse thoroughly with de-ionized water.
- Visually inspect the openings and treads for solid materials.
- Allow sampling equipment to air dry as long as possible on a clean polyethylene sheet or aluminum foil.

DISPOSAL of DECONTAMINATION WASTES

All equipment and solvents used for decontamination will be decontaminated or disposed of properly. All aqueous liquids generated in the personnel and equipment decontamination process will be collected, characterized and appropriately disposed of. All disposable PPR will be containerized in drums and properly disposed of.

EMERGENCY EQUIPMENT and FIRST AID REQUIREMENTS

Emergency and first aid equipment to be maintained onsite will include the following:

- Approved, portable, emergency eye wash units in accordance with ANSI Standard Z358.1
- At least one industrial first aid kit will be provided and maintained at an easily accessible, uncontaminated location chosen by the HSO. Additional first aid kits may be provided.
- First aid and CPR kit locations will be specifically marked by the HSO and stocked with adequate water and other supplies to cleanse and decontaminate burns, wounds or lesions.
- 10#A: B: C type dry chemical fire extinguishers will be provided at all project site locations where flammable materials present a fire risk. Mobile equipment will be equipped with 2-pound extinguishers.

Agencies and medical facilities that need to be contacted in the event of an onsite emergency, as well as directions to the nearest hospital, are identified at the beginning of this HASP. The tables stating the emergency contact information and hospital location will be posted in a prominent location(s) onsite.

If a site worker becomes injured or ill, Red Cross/American Heart Association recommended first aid procedures shall be followed. First aid, or other appropriate initial reactions, will be provided by the certified first aid technician that is closest to the incident.



NOTE: When protective clothing has been grossly contaminated during an incident, contaminants may be transferred to the treatment personnel or the wearer and cause injuries. Unless severe medical problems have occurred simultaneously with splashes, protective clothing should be washed off as quickly as possible and removed. If the worker can be moved, he/she will be taken to the personnel decontamination station where decontamination procedures, additional first aid or preparation for transport to the hospital will be accomplished. In the event that the victim could not be decontaminated, the rescue service provider must be notified of the situation.

If the injury to the worker is of a chemical nature, the procedures as listed in the SDS for the chemical are to be followed. In the event the SDS is not available, such as for an unknown contaminant, the steps listed below are to be followed:

Eye Exposure: If contaminated solids or liquids get into the eyes, wash eyes immediately using copious amounts of water while lifting the lower and upper eyelids occasionally. Wash for at least 15 minutes. Obtain medical attention.

Skin Exposure: If contaminated solids or liquids get on the skin, promptly wash the contaminated skin using soap and water. Then immediately obtain medical attention.

Respiratory Exposure: Immediately move the victim to fresh air and obtain medical attention.

Ingestion Exposure: Seek immediate medical attention.

NOTE: Any person who is transported to the hospital for treatment related to an exposure injury will take with them the appropriate information (i.e. SDS) on the chemical to which they have been exposed. SDS for known or suspected chemicals to exist onsite will be stored in OSC's project field office and maintained by the HSO. Due to the nature of unknown contaminants and exact manufacturers, a proxy SDS may be used in lieu of the actual SDS as a reference only.

MEDICAL EMERGENCY RESPONSE

REPORTING AN EMERGENCY

The HSO will immediately notify the Site Superintendent stating the points that are listed under a minor injury. However, with a major emergency the HSO must state that this is a major emergency. Concurrently the HSO must direct that 911 be called if not already done so. The Site Superintendent will react as follows:

- Call OSC's Corporate Director HS&E
- Call the fire department (if necessary)
- Call the police (if necessary)
- Call the Project Manager

PRE-PLANNING

Arrangements for emergency services will be made prior to initiating onsite operations. Emergency response procedures will be covered as part of the project training.



EMERGENCY CHAIN OF COMMAND

In the event of an emergency, personnel will immediately notify the HSO, using available communications. The HSO will assess the situation and take appropriate action which can include ceasing all work; ordering evacuation of the work zone; requesting emergency medical treatment; and/or administering first aid.

WEATHER

In the event of severe weather (lightning, high winds, etc.), the HSO will notify project personnel. As the storm approaches, all work will stop, loose objects will be secured, and site personnel will take shelter at a location pre-arranged by the HSO. After the severe weather has passed, and prior to work startup, the HSO will inspect the site for hazards.

Lightning – Any visual sighting of lightning will result in stopping outside work activities. Work will not commence until 30 minutes after the last observed strike.

High Winds – Winds higher than 30 mph will cause all exterior hoisting and lifting to cease. Crane operators have the authority to stop lifts at lower wind speeds based on their discretion.

Project Tornado Shelter (not anticipated for this project) - To be determined with initial hazard exposure assessments and site mobilization. All reasonable efforts should be made to access this location in the event of a tornado. Recognizing imminent tornado signs include seeing an unusually dark sky, possibly with some green or yellow clouds. You may hear a roaring or rumbling sound like a train, or a whistling sound like a jet. Large hail may also be falling. You may be able to see funnels, or they may be hidden by rain or hail.

Listen to the radio for tornado warnings during bad thunderstorms. If a tornado warning is issued, don't panic. Instead, listen and look. Quickly but calmly follow directions to get to shelter. Take cover. Indoors you should go down into the basement and crouch down under the stairs, away from windows. Do not take an elevator. If you can't get to a basement, go into a closet or bathroom and pull a mattress over you or sit underneath a sturdy piece of furniture on the ground floor near the center of the building. Pull your knees up under you and protect your head with your hands. A bad place to be in a tornado is in a building with a regular freestanding roof such as a gymnasium, arena, auditorium, church or shopping mall. If you are caught in such a building, take cover under something sturdy. More than half of tornado deaths occur in mobile homes. If a tornado threatens, get out and go to a building with a good foundation, or lay down in a ditch away from vehicles and other objects.

If you are driving, get to a shelter, lie down in a ditch or seek cover up under the girders of an overpass or bridge. Stay as close to the ground as you can. Protect your head and duck flying debris. Stay away from metal and electrical equipment because lightning accompanies tornadoes.

If you have time before the tornado strikes, secure objects such as garbage cans and lawn furniture which can injure people. While most tornado damage is a result of the violent winds, most injuries and deaths actually result from flying debris.



SPILL CONTAINMENT PROCEDURES

The purpose of this section is two-fold; to prevent and control accidental discharge of polluting materials to surface soils and waterways (or groundwater); and to minimize and abate the hazards to human health and the environment from hazardous waste releases to air, soil or surface water. These procedures will be reviewed with project personnel prior to startup and thereafter as necessary during regular weekly HS&E meetings and daily briefings.

EMERGENCY NUMBERS

The names and phone numbers of emergency services and offices to be contacted in the event of a spill, or any other onsite emergency, is provided in the Contact Information portion located at the beginning of this HASP. These phone numbers will be posted by the HSO in prominent positions throughout the Project site.

DEFINITIONS

For the purposes of this plan, spoils are defined as any material that is accidentally or intentionally leaked, pumped, poured, dumped or emitted onto the ground, surface water, groundwater or air. All spilled material will be considered hazardous and be cleaned up following the established spill response procedures and reported as required.

Spills will be categorized as: Priority 1 or Priority 2.

Priority 1 Spills: Result in a significant release of contamination into the air, or onto the ground, outside the exclusion zone.

Priority 2 Spills: Result in minor spill, less than five (5) gallons and not reportable, which can be easily cleaned up.

POTENTIAL SOURCES and PREVENTATIVE MEASURES

The contracted work has potential spill sources. These include, but are not limited to:

Potential Spill Source	Preventative Measure(S)
Transporting waste material to selected on and offsite disposal facilities	OSC will verify that all transportation vehicles used in support of this contract are equipped with the appropriate spill response equipment, and that the drivers have received the proper spill response training and maintain all the required federal and state licenses and certifications. Loads will be secured, tied down, and covered, and transport vehicles will be checked prior to release from the site.
Re-fueling onsite equipment	OSC will prohibit the long-term storing of diesel fuel. OSC will limit the amount of fuel kept onsite to only that required for weekly equipment usage.
General spill prevention requirements	Easily accessible spill response stations will be set up containing absorbent pillows, floor dry, shovels and brushes to be used in the event of a spill. The location will be known to all project personnel.



SPILL RESPONSE PROCEDURES

Initial Containment and Response

In the event of a spill, the following initial containment and response procedure must be implemented immediately.

- **Administer first aid to injured person(s).** Any employee that observes a spill will act immediately to remove and /or protect the injured person from a life-threatening situation. First aid and/or decontamination procedure will be implemented as appropriate.
- **Warn other persons and/or vehicles of the hazard.** Personnel will act to prevent any unsuspecting persons from coming in contact with the spilled materials by alerting nearby people and by obtaining assistance of other personnel who are familiar with spill control and clean up training.
- **Stop the spill at the source, if possible.** Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as up righting a drum, closing a valve or temporarily sealing a hole with a plug. OSC personnel will not make more than a brief effort, prior to notifying the HSO.
- **Notify the HSO.** Using available onsite communication systems, or other rapid communication procedures, the HSO will be notified of the spill, including information on the material spilled, quality, personnel injuries and immediate life-threatening hazards. The HSO will notify emergency contacts immediately (See Emergency Contact List).

NOTE: If a flammable liquid is involved in the spill, remove all ignition sources and monitor for explosive conditions with an LEL meter during cleanup. Also, remove any surrounding materials that might chemically react with the spilled materials.

Spill Containment

The HSO will make a rapid assessment of any spill at the site; apply the appropriate HS&E considerations to the use of PPE in the spill release zone; and direct primary containment measures. Depending on the nature of the spill, primary containment measures may include, but are not limited to:

- Constructing a temporary containment berm to control the horizontal flow of the spill using absorbent pads, booms, sandbags, sand and/or other inert materials.
- Placing drums under the leak to collect the spilling material before it flows onto the ground.
- Digging a sump, installing a polyethylene liner and diverting the spilled material to the sump
- Transferring the material from its original container to another container

Spills that occur between the project site and the offsite disposal facility will be initially contained by the driver using on-board spill response equipment.



Spill Cleanup

The HSO and Project Manager will develop an incident-specific spill clean-up plan for Priority 1 spills that will take into consideration the associated hazards, quantity of spilled material, disposal methods and costs. The incident specific spill clean-up plan will be reviewed for acceptance by the owner representative and/or other Federal, State or Local oversight personnel. Once approved, the spill clean-up plan will be implemented under the direct supervision of the OSC site superintendent.

Generally, all visually detectable spills, leaks or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand and/or other inert materials as practicable using the response procedures outlined below.

Spill Type	Response
Waste oil on the ground	Contain the spill and excavate the visually contaminated soils. Containerize, sample for classification purposes and dispose offsite.
Building/paved surfaces	Contain the spill. Power wash the contaminated are(s). Collect and containerize the resultant wastewater for onsite treatment.
Vehicle	Power wash the vehicle. Collect, contain and treat the resultant decontamination fluids.
Heavy Equipment hydraulic fluid leak	Stop the equipment immediately. Clean up spill and/or leaking fluid. Contact HSO for repair approach.
Waste from truck spilled on roadway	Contain the spilled material. Collect, containerize and remove the spilled material. Sample for waste classification purposes. Dispose of material offsite.

Post-spill Inspection

The HSO, site superintendent and owner representative will jointly inspect the spill site to determine that the spill has been cleaned up to the satisfaction of all involved parties.

Reporting

In the event of a spill incident, the HSO will immediately contact the site superintendent and owner representative; initiate the emergency procedure steps that are provided in this HASP and complete a Spill Report for submittal to the owner representative.

OSC will be responsible for reporting any Priority 1 spills immediately following the incident. A written report will be submitted within seven days after the telephone call reporting the incident. The written report will include the item spilled, quantity, identification and manifest numbers, whether the amount spilled is EPA/State/District reportable, exact location of occurrence,



containment procedures used, anticipated clean-up and disposal procedures and disposal of spill residue.

HEAT/COLD STRESS

HEAT

The HSO will visually monitor personnel for signs of heat overexposure. The HSO will be responsible for implementing the following program when the ambient air temperature exceeds 85° F (heat stress monitoring).

Symptoms

Weakness, dizziness, fainting, nausea, headaches, cool and clammy skin, profuse sweating, slurred speech, weak pulse and dilated pupils.

Procedure

Personnel who wear PPE allow their body heat to be accumulated with and elevation of the body temperature. Heat, heat exhaustion and heat stroke can be experienced which, if not remedied, can threaten health and life. A current edition of the American Red Cross Standard First Aid book or equivalent will be maintained onsite at all times so that the HSO and all personnel will be able to recognize the symptoms of heat emergency and be capable of controlling them.

When PPE is worn (especially level C) the suggested guidelines for ambient temperature and maximum wear time per excursion are as follows:

<u>Ambient Temperature (°F)</u>	<u>Maximum Wear Time Per Excursion (Minutes)</u>
Above 90	15
85 – 90	30
80 – 85	60
70 – 80	90
60 – 70	120
50 – 60	180

One method for measuring the effectiveness of employees' rest-recovery regime is by monitoring their heart as follows:

- During a 3-minute period, count the pulse rate for the last 30 seconds of the first minute, the last 30 seconds of the second minute and the last 30 seconds of the third minute.
- Double that count.
- If the recovery rate during the last 30 seconds of the first minute is at 110 beats per minute or less and the deceleration between the first, second and third minute is at least 10 beats/minute, the work recovery regime is acceptable. If the employee's rate is above the specified, a longer rest period is required as well as an increased intake of fluids.
- Onsite tracking of ambient temperature as well as pulse/temperature of the worker will be conducted by the HSO and recorded throughout the work shift.

COLD

Whole body protection will be provided to personnel who will have prolonged exposure to cold air. The HSO will use the equivalent chill temperature when determining the combined cooling effect of wind and low temperatures on exposed skin or when determining the proper clothing insulation requirements. The following clothing will be used as deemed necessary, by the HSO.

- Appropriate underclothing (wool or other cloth)
- Outer coats that repel wind and moisture
- Face, head and ear coverings
- Extra pairs of socks
- Wool glove liners or wind and water repellent gloves

Personnel who are working in continuous cold weather are required to warm themselves on a regular basis in the onsite trailer. Drinks will be provided to personnel to prevent dehydration. The HSO will follow the work practices and recommendations for cold stress threshold limit values as stated by the current edition of the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices by the American Conference of Governmental Industrial Hygienists, or equivalent cold *stress prevention* methods.

LOGS, REPORTS and RECORDKEEPING

The following reports will be prepared and submitted as indicated below. Copies of the field logs, permits and forms required for this project will be kept onsite for the duration of the project.

TYPE	FREQUENCY
JHA - Pre-plan for High-Risk Work	Prior to start of work
Employee Daily Safety Brief, Site Log	Daily, minimum
Air Monitoring Reports	As necessary
Incident Report	As required, within 48 hours



The above logs and reports will be prepared by the HSO, or the designated representative, at the frequency noted above. Additionally, daily logs of all personnel working or visiting the site will be maintained. Completed logs and reports will be maintained stored on site in the project field office. Copies shall be provided to the Project Manager.

Hot Work Permit Procedures (Welding, Cutting, Open Flame Work & Sparking)

OSC will follow specific procedures to assure all hot work activities, welding, burning, cutting, sparking and other ignition source work is completed safely without incident (no fires, injuries or property damage). All hot work shall require an approved hot work permit issued by the OSC HSO prior to commencing work. The hot work permit shall define the minimum acceptable procedures and precautions that shall be taken for all phases of the hot work; prior to start of work, as well as during and after hot work is completed. A permit shall be issued daily for each specific location, type of hot work, protective measures, date, time duration and completion time. Hot work permits will be available for review. Completed and signed permits shall be returned to the HSO at the end of the workday. Copies of completed permits shall be maintained in the OSC field office for review.

NOTE: Many of the piping, vessels and towers at the site contain flammable materials. The hot work permit procedure MUST be followed.

Authorization of Equipment Operators

All heavy equipment operators working on site will be approved competent either through OSC's in-house program or through local labor union process. Training requirements for approval are as follows:

HEAVY EQUIPMENT OPERATORS

- Formal classroom with written qualification, or
- On-the-job mentoring for 40-hour minimum under a competent person, and
- Determination of proficiency by an OSC certified supervisor

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition, operators may need to obtain state-specific crane licenses/permits.

CRANE OPERATORS

- Formal classroom with written qualification
- Determination of proficiency by a certified operator
- On-the-job mentoring for 80-hour minimum under a competent person

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition to the certification, operators may need to obtain state-specific licenses/permits.



ATTACHMENT I: Forms



Ontario Specialty Contracting
 140 Lee St
 Buffalo, NY 14210

PSI / JHA / SPA

Company
 Ontario Specialty Contracting

Date & Time
 02/16/2024 03:06 PM

Job No./Permit No.
 22010

Project
 Plastics

Task Location
 3821 River Road

Muster / Meeting Point
 Guard Shack

Job Site Address
 3821 River Road

Nearest Hospital
 Kenmore Mercy Hospital

Nearest Hospital Address
 2950 Elmwood Avenue

Review these items with the crew at the site of the task and check the blocks that apply to the work.

Environmental Hazards

- Spill Potential/Containment
- HAZMAT / TDG Storage
- Weather / Conditions
- SDS Reviewed for Hazardous Materials
- Ventilation Required
- Heat Stress / Cold Exposure
- Lighting Levels Too Low
- Housekeeping

Ergonomics Hazards / Material Handling

- Working In a Tight Area
- Part of Body in Line of Fire
- Working Above Your Head
- Pinch Points Identified
- Repetitive Motion

Work at Height Hazards

- Barricades Flagging, and Sign in place
- Hole Coverings in Place
- Protect from Falling Items
- Powered Platforms
- Others working overhead / Below
- Fall Arrest Systems
- Ladders

Activity Hazards

- Welding/Grinding
- Burn / Heat Sources
- Compressed Gasses
- Working on / Near Energized Equipment
- Electrical Cords / Tools - Condition
- Equipment/ Tools Inspected
- Critical Lift Meeting Required
- Energy Isolation
- Airborne Particles
- Open Hole(s) / Leading Edge (s)
- Mobile Equipment / Vehicle
- Rigging
- Excavation / Underground Work Hazards
- Confined Space

Access / Egress Hazards

- Scaffold (Inspected and Tagged)
- Slip / Trip Potential Identified
- Required Permits in Place
- Excavations
- Walkways / roadways

Personal Limitations / Hazards

- Clear Instructions Provided
- Trained To Use Tool and Perform Task
- Distractions in Work Area
- Working Alone (Communication)
- Lift Too Heavy / Awkward Position
- External Noise Level
- Physical Limitations
- First Aid Requirements

PPE Requirements

- Goggles / Fectoggles/ Spoggles
- Face Shield
- Gloves (Kevlar or Leather)
- Coverall (Fire Retardant - FRC)
- Hearing Protection
- Respirator
- Harness / Lanyards
- Reflective Vest
- Footwear (Condition / Application)
- Safety Glasses
- Welding Hood
- Tyvex Suit
- Retractable Lanyard
- Hard Hat
- 4 Gas Monitor
- Cut resistant sleeves (Kevlar or Approved Equivalent)

Other

Risk Rank Table/Nivel de Riesgo

RISK OUTCOME/RIESGO		Risk Rank	
High/Alto		(8-10)	
Significant/Significante		(6-7)	
Moderate/Moderado		(5)	
Low/Bajo		(2-3-4)	

		Consequence/Consecuencia				
		Insignificant/No importante 1	Minor/Menor 2	Moderate/Moderado 3	Major/Mayor 4	Catastrophic/Catastrofico 5
Likelihood	Almost Certain/Casi Cierta 5	6	7	8	9	10
	Likely/Probable					

Identify the task steps and hazards, and then identify the plans to eliminate or control the hazards

TASK STEPS	HAZARD	CONTROL	RISK RATING
General site tasks (including maintenance of facility, site clean up, equipment maintenance, site review)	<ul style="list-style-type: none"> - Slips/trips/falls - Strain/sprain - Struck by / Crush - Pinch points - Driving onsite 	Maintain clean and designated pathway to and from work area - Use proper lifting techniques, use equipment for lift when possible, team lift over 50 pounds - Maintain contact with operators in work area, notify when approaching work zone - Stay clear of swing radius of equipment - Identify pinch points and keep hands clear - Conduct equipment inspection - Use equipment and tools as manufacturer intended	3
Equipment repair / maintenance	<ul style="list-style-type: none"> • Struck by / caught between equipment • Injuries from hand, power and pneumatic tools • Hand injuries • Rigging failure • Slips/trips 	<ul style="list-style-type: none"> • Inspection of equipment • Spotters to maintain eye contact with operators and wear hi-vis vests. • Communication using hand signals / 2 way radios • Backup alarms functioning • Proper hand / body position <ul style="list-style-type: none"> • Inspect tools before use. • Do not remove guards or second handles. • Glove use • Face shields for grinding and saw cutting. • Use pins to connect hoses and whip checks <ul style="list-style-type: none"> • Proper hand, arm, and body placement. Awareness of line of fire potential • Proper glove per task • Identify pinch points, use appropriate tools for task <ul style="list-style-type: none"> • Inspect crane and ground conditions prior to operating • Inspect rigging before use • Verify weight of load and center of gravity • No personnel under suspended loads • Tagline where necessary 	5

		<ul style="list-style-type: none"> • Maintain housekeeping • Eyes on path of travel 	
Set up of regulated area (drop cloths/banner tape), hang glove bag(s) and decontamination unit for abatement.	<ul style="list-style-type: none"> • Cuts using knife • Slips, trips, falls • Fall from height (if applicable) when hanging glove-bags • Unauthorized access and contamination of non-regulated areas 	<ul style="list-style-type: none"> • Use retractable utility knife • Use Kevlar gloves • Cut away from body • Good housekeeping • Clean up scrap poly, tape, glue cans, etc. as you go • Elevate all cords overhead • Minimize reaching, use podium or platform ladder or baker scaffold when available. Use Scissor lifts when applicable Use stepladders as last option. • Have a designated access point with step off area(drop cloth, disposal bags) for employee entrance and exit from regulated area 	1
Pipe Inspection / Identification	<ul style="list-style-type: none"> - Slips/trips/falls - Pinch points - Working from height / falls (aerial lift, ladder or platform) - Overhead hazards - Chemical exposure - Fire - Explosion - Strain/sprain 	<ul style="list-style-type: none"> - Maintain clear walking paths, plan approach and take purposeful steps - Identify pinch points and keep hands/body clear, wear appropriate gloves - Only trained and authorized personnel to operate equipment and tools - Inspect work area prior to start and periodically throughout day to identify change in hazards (including overhead) - Wear chemical resistant outer clothing, gloves and face shields when contents of pipe are unknown - Use intrinsically safe drill with cutting oil to drill hole at high point of pipe. Inspect atmosphere within pipe with 5 gas meter. - Use intrinsically safe drill with cutting oil to drill hole at low point of pipe to drain material as necessary. - Use proper ergonomics (do not twist while lifting, do not extend reach beyond allowed range, proper lifting stance) 	7
Operate Scissor and Boom lifts to access pipe insulation for glove-bagging	<ul style="list-style-type: none"> • Falls from heights • Struck by and caught in between • Machine tip over • Pinch points 	<ul style="list-style-type: none"> • Inspect equipment prior to use for damage, defects or leaks. Ensure that back up alarms are working. • Inspect the work area for any uneven surfaces, hoses, debris or overhead hazards that could cause the lift to become unbalanced and cause potential harm to the operator. • Take equipment out of service if damage, defects or leaks are identified. Report the condition to the Site Superintendent or the Safety Manager. • Only trained, authorized personnel will be allowed to operate equipment onsite. • Inspect PFAS and anchor points prior to use • Don fall arrest equipment and secure to the anchorage point in the aerial lift prior to operating. • Do not drive units with platform in elevated position • Keep units within plant designated walkways when traveling • Do not leave the aerial lift basket while elevated to enter a different work surface unless you maintain 100% tie off. 	3

		<ul style="list-style-type: none"> • Do not stand on the railings of the basket or use a ladder or other item to gain additional height in the aerial lift basket. • Use a ground person in the event that the controls in the aerial lift basket become inoperable or the operator becomes disabled. • Always look in the direction of travel while operating. • DO NOT walk under an elevated aerial lift unit. • Never place your body between a fixed object and the aerial lift. 	
Removal of pipe Insulation using glove-bag methodology	<ul style="list-style-type: none"> • Asbestos exposure • Cuts on hands from metal banding, jacketing or tie wire • Back pain/strain from awkward and static positions • Back strain when moving full glove bags 	<ul style="list-style-type: none"> • Use water • Wear half face respirator with HEPA filter • Gloves • Poly Pro suit (sleeves down, hoodie on) • Wear Kevlar gloves inside glove-bag gloves if possible, Develop plan to remove jacketing off pipe ahead of sealing bag. • Rotate postures as needed. Take stretch breaks. • Do not overload bag. No more than 3' of pipe insulation per bag. If using large glove-bags use lull to lift bag. • Use 2-man lift. • Use proper lifting techniques – lift with legs, not with back. • Use carts/buggies as needed/available. 	2
Building/Structure Demolition and Dismantling	<ul style="list-style-type: none"> - Struck by/crush - Flying debris - Dropping materials - Slip/trip/falls - Structure failure - Respiratory hazards - Falls - Working from heights (including aerial lifts) - Fire - Pinch points - Stored Energy 	<ul style="list-style-type: none"> - Delineate work zone, only authorized personnel within perimeter - Only competent and authorized personnel will utilize heavy equipment - Inspect work area periodically for changes in structure or overhead hazards - Maintain clear walking paths, plan approach and take purposeful steps - Work upwind, keep area wet as appropriate to limit dust production - Complete pre-inspection of structure to determine potential chemical hazards - All demolition will be conducted under the direction of an onsite demolition competent person - Only trained and authorized personnel will use aerial lifts to access structure as needed - Ensure any fall protection is inspected prior to use, only trained personnel will use fall protection - Identify pinch points and keep clear of them, wear appropriate gloves - Identify potential areas of stored energy (cables, bounce back of structure, overhead hazards). Discuss with SSO to determine addition control measures 	7
Equipment Decontamination	<ul style="list-style-type: none"> - Flying debris - High pressure - Slip/trip/falls - Sprain/strain - Pinch points 	<ul style="list-style-type: none"> - Delineate work zone to prevent personnel from flying debris - Wear protective PPE (tyvek, face shield) - Inspect pressure washer prior to use, only authorized and trained personnel to use - Keep pressure washing wand pointed away from body and away from others 	3


- Keep walkways clear of debris, wear nonslip boots, plan approach
- Use buddy system during set up, team lift greater than 50 pounds, use equipment to lift when available.
- Practice proper ergonomic (no twisting while lifting, maintain three points of contact during access and egress from equipment)
- Identify pinch points and take precautions when working around them, wear appropriate gloves

Weather

Current

Temperature

30




Overcast
Clouds
64% Humidity

Forecast

Temperature

27 30



Light Snow
59% Humidity

1. I have reviewed the weather conditions with the crew?
2. I have reviewed the road conditions with the crew?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Current

Heat Index

26

Forecast

Heat Index

25

3. I have reviewed the OSHA Heat Index?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

By signing with your pin below: You acknowledge and understand the **safety instructions** you've been given and that you will follow all of the required procedures and safety rules. You acknowledge that you have arrived for your shift injury free and must notify supervision or the safety department on site of any injury/accident or near miss that you had during your shift. You also verify that you are not showing any symptoms such as fever, cough or shortness of breath. you have not been in contact with anyone known to have COVID-19 and you have not traveled to any area with widespread concern of coronavirus.

Initial After:

Worker	Verified
--------	----------

Supervisor:
Auditor:

	Adequate	Inadequate		Adequate	Inadequate
1. Task Description	<input type="checkbox"/>	<input type="checkbox"/>	6. Reviewed / Signed by PSI / JHA Lead	<input type="checkbox"/>	<input type="checkbox"/>
2. Hazard Identification	<input type="checkbox"/>	<input type="checkbox"/>	7. Muster / Assembly Point Identified	<input type="checkbox"/>	<input type="checkbox"/>
3. Hazard Controls	<input type="checkbox"/>	<input type="checkbox"/>	8. Tools and Equipments Inspected	<input type="checkbox"/>	<input type="checkbox"/>
4. All Sections Implemented	<input type="checkbox"/>	<input type="checkbox"/>	9. PSI / JHA at Task Location	<input type="checkbox"/>	<input type="checkbox"/>
5. Workers' Names Legible	<input type="checkbox"/>	<input type="checkbox"/>			

Comments

Evacuation Plan

Note

Muster point for BCP site will be at the guard shack at the main entrance.



JOB SAFETY INSPECTION AND AUDIT

LOCATION/PROJECT:

Date:

Audit and Inspection Report by:

OSC Summary of Findings and Improvement Measures:

Summary



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
SAFETY ADMINISTRATION, POSTINGS, FIRST AID & EMG RESPONSE				
1. OSHA 300A form posted between February 1 and April 30				
2. LABOR POSTINGS (ALL IN ONE FEDERAL & STATE)				
3. Emergency Phone number for the nearest medical center posted				
4. Safety Briefs/Talks & AHA's current and up to date.				
5. Work areas properly delineated (barricaded) and hazard warning signs				
6. Appropriate First Aid Supplies and Trained Personal Available				
7. Training Documentation Complete (40 Hour, OSC BASIC 10/OSHA 10, NYS Asbestos Hard Card Supervisors/Handlers)				
HOUSEKEEPING				
1. Work area neat, debris picked up and free of trip hazards				
2. Projection and impalement hazards eliminated/protected (removed,				
3. Waste containers provided and used				
4. Passageways and walkways clear				
5. Cords and leads off the floor or protected				
6. Spill Kit Available & Stocked				
FIRE PREVENTION				
1. Adequate firefighting equipment (hoses, extinguishers, fire blanket)				
2. Appropriate Flammable and Combustible Storage				
3. "No Smoking" signs posted and enforced near flammables				
ELECTRICAL AND CONTROL OF HAZARDOUS ENERGY				
1. Extension cords with no bare wires or missing ground prongs in service				
2. Ground fault circuit interrupters being used				
3. Terminal boxes accessible and equipped with required covers				
4. Temporary Lighting (Guarded, Covered, No Exposed Sockets)				
5. Equipment wiring				
6. Proper Hazardous Energy Controls (LOTO, Air Gapping, Blanks)				
HAND, POWER & POWDER-ACTUATED TOOLS				
1. Hand tools inspected regularly				
2. Guards in place on equipment				
3. Right tool being used for job at hand				



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
4. Operators of powder-actuated tools are licensed				
FALL PROTECTION				
1. Safety guard rails properly installed and inspected.				
2. Employees exposed to fall hazards are protected (PFAS 100% Tie-off Guards, Covers, Nets)				
3. Employees below protected from falling objects (Toe Boards or Guards)				
LADDERS				
1. Straight Ladders extended at least 36 inches above the landing, proper				
2. Ladders inspected & properly use (secured, proper angel, type)				
3. Ladders with split or missing rungs taken out of service (tagged out)				
4. Stepladders used in fully open position				
SCAFFOLDING				
1. All scaffolding inspected daily by a competent person				
2. Erected on sound rigid footing				
3. Tied to structure as required				
4. Guardrails, intermediate rails, toe boards and screens in place				
5. Planking is sound and sturdy				
6. Baseplates and mudsills in place				
7. Proper access provided				
8. Employees below protected from falling objects				
FLOOR & WALL OPENINGS				
1. All floor or deck openings are planked over or barricaded				
2. Perimeter protection is in place				
3. Deck planks are secured				
4. Materials stored away from edge				
TRENCHES, EXCAVATION & SHORING				
1. Competent person on hand				
2. Excavation proper protective system (shored or sloped/benched)				
3. Materials and spoil piles are stored at least two feet from trench				
4. Ladders provided within 25 feet in trench > 4 ft depth				
5. Equipment safe distance from edge of trench or excavation				



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
6. Warning system in place if operator cannot see edge of trench				
MATERIAL HANDLING & HAZARD COMMUNICATION				
1. Materials are properly stored or stacked				
2. Employees are using proper lifting methods				
3. SDS Available/Proper Containers & Labels Noted				
4. Chemical Products properly used and stored per SDS				
WELDING & BURNING				
1. Gas cylinders stored upright, securely, and in good condition				
2. Proper separation (20 ft) between fuels & oxygen or fire barrier				
3. Burning/welding/cutting goggles or shields are used				
4. Fire extinguishers are nearby (< 75ft)				
5. Equipment & Hoses are in good condition. Flash arrestor equipped.				
RIGGING, HOISTING/LIFTING & PLACING ACTIVITIES (HOISTS, CHAINFALLS, CRANES & FORK TRUCKS)				
1. Proper setup of lifting/hoisting equipment, controlled work zone established, swing radius barricaded & spotter provided				
2. Operator familiar with load chart (lifting capacity, weight of load <75% Max capacity of lifting/hoisting equipment & rigging components)				
3. Proper communication (radio communication, hand signals)				
4. Equipment & rigging inspected. Hoisting/Rigging by competent person.				
5. Employees kept from under suspended loads				
6. Chains and slings inspected (ANSI rated & properly tagged).				
7. Pick plan available and reviewed with crew				
8. Competent operator, rigger and flagman				
POWERED EQUIPMENT (Earth Moving, Fork Trucks, Aerial Lifts, ATV's)				
1. Equipment Physical Condition, daily inspection current with equipment (Guards, Lights, Glass/Cage, Tires/Tracks, Lights, Frame)				
2. Operational and Safety Controls Functional				
3. Proper Operation and Use Observed				

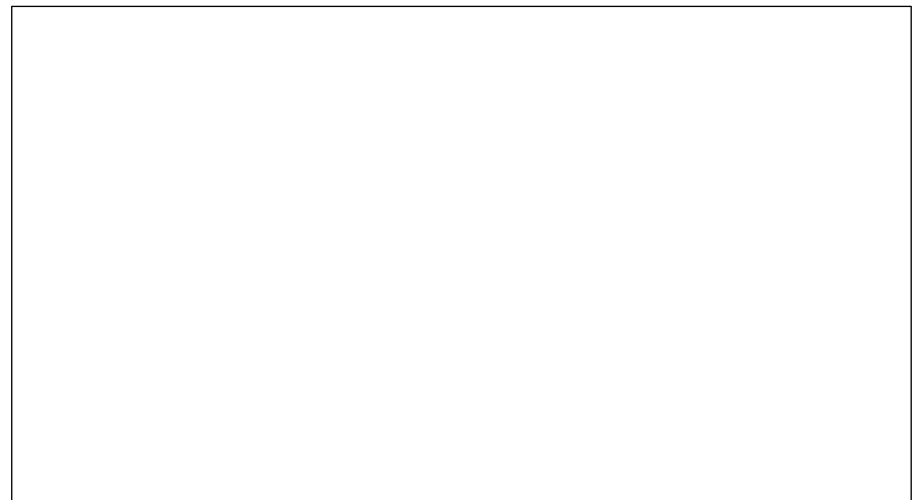
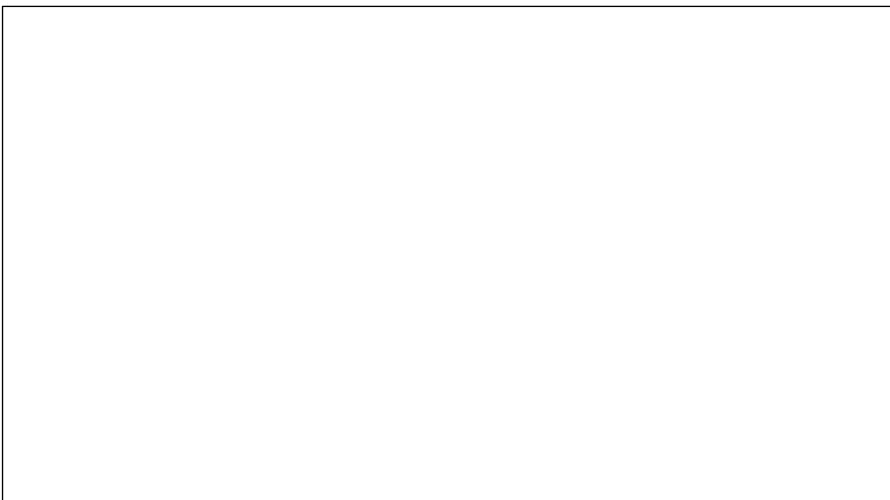
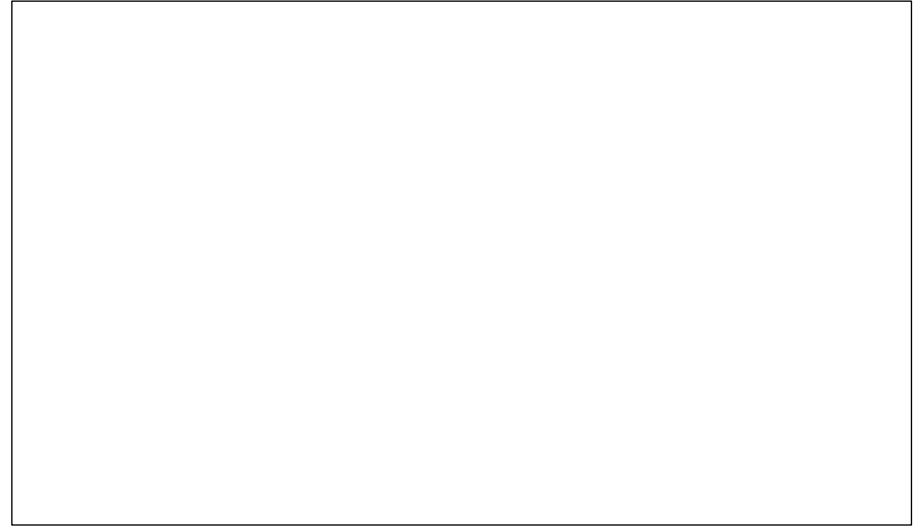
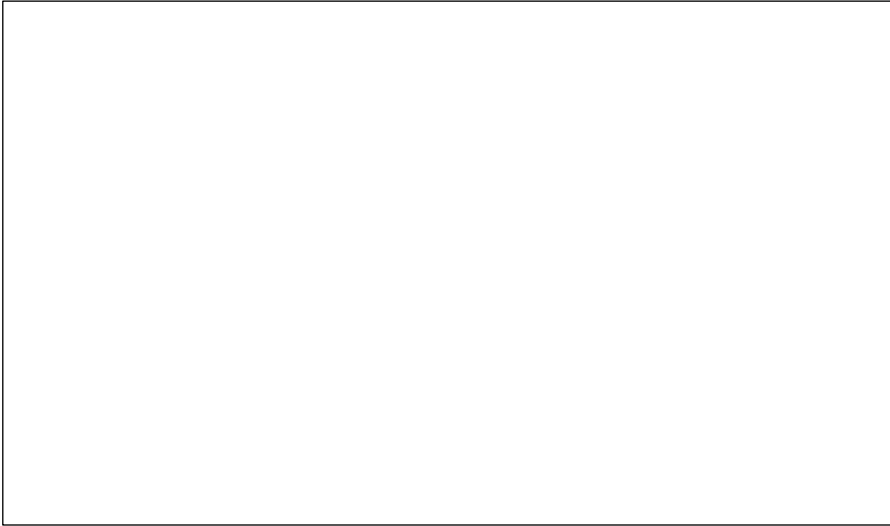


JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
4. Operators Manual Available and Inspection Check List Available with Equipment				
PERSONAL PROTECTIVE EQUIPMENT				
1. Proper Head Protection used given task (ANSI Rated Hard Hats, Properly Worn)				
2. Proper Eye Protection given task (ANSI Rated Eye and Face Protection)				
3. Required Respirators given task (Proper Use, Care, Training & Medical)				
4. Proper Hearing protection is being worn as required (NR Rating)				
5. High-visibility vests or equivalent high vis clothing are being worn				
6. Proper Hand, Foot, Leg, face & Skin Protection given task (Gloves, Safety Boots, Chaps, Metatarsals, Clothing - FR, Chemical)				
ABATEMENT				
1. Decontamination unit properly installed and functioning (Shower, Filtration, Dirty Room, Clean Room & Waste Out).				
2. Proper negative air established, # units, monometer, backup units, temporary power, lighting, GFCI, exhaust, barricades & waste storage				
3. Containment properly installed (air locks, EMG egress, hazard signs)				
4. Proper abatement methods observed (PPE, Wet Methods & Handling)				
5. Entry exit log in use and properly completed				
6. Supervisors log and inspections current				

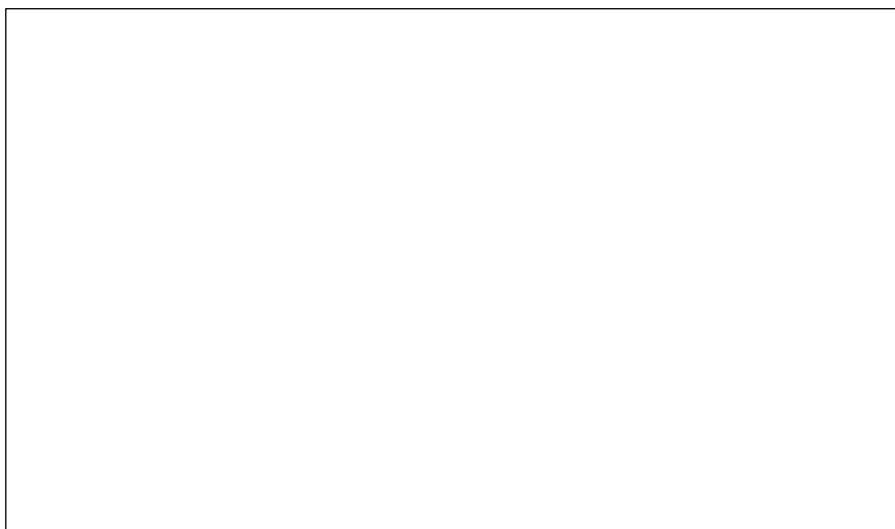
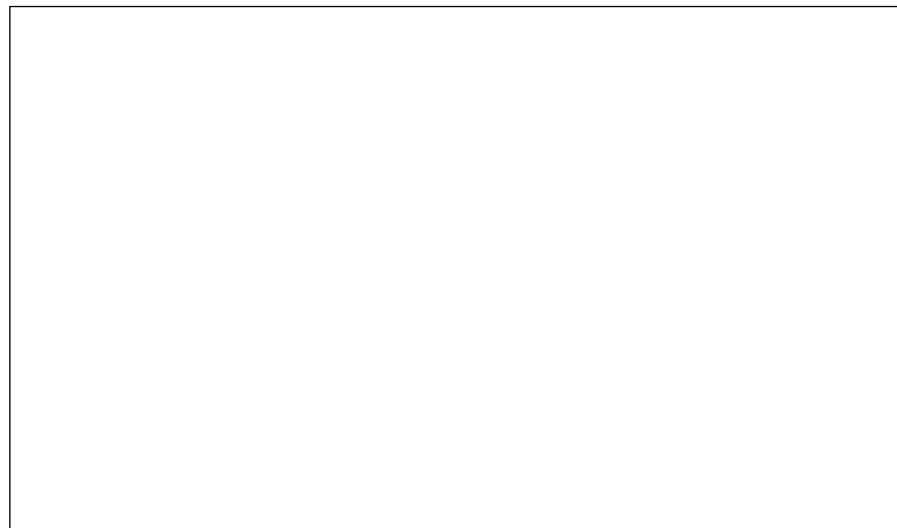
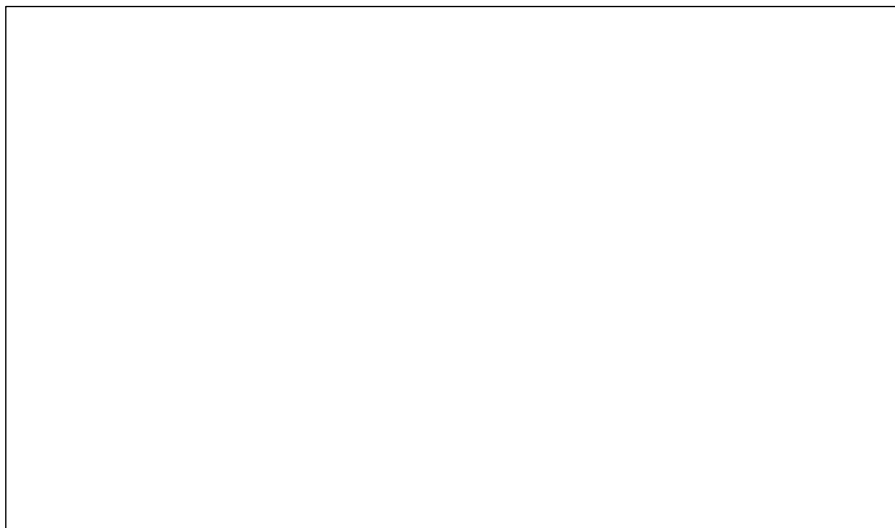


Select Site Photos





Select Site Photos Continued



Mercury Work Addendum to the Site Specific Health and Safety Plan

Tonawanda Plastics

Rev. 4.0

3821 River Road
TONAWANDA, NY

Submitted to:

3821 River Rd, Inc.
140 Lee Street, Suite 200
Buffalo, NY 14210

Prepared by:



140 Lee Street
Buffalo, NY 14210



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Authorization Signatures

This Addendum to the Site-Specific Health and Safety Plan (SSHASP) has been reviewed and approved by the individuals below. The undersigned certify that to the best of their knowledge this SSHASP meets the safety requirements as defined by the project specifications and all known applicable governing regulatory requirements.

John Yensan, President
OSC

Date

Dan Flanigan, Project Manager
OSC

Date

Matt Reardon, Superintendent
OSC

Date

Paul Mulvey, Director HS&E
OSC

Date

JOB SPECIFIC SPECIALIZED TRAINING AND MEDICAL CLEARANCE

Employees involved in mercury-contaminated soil remediation activities will participate in a biological monitoring program consistent with the requirements and guidance of OSHA Directive CPL 02-02-006. Prior to beginning work, affected employees will undergo baseline testing using urine mercury levels, the primary indicator for elemental mercury exposure. Periodic monitoring will be conducted throughout the duration of the project based on exposure potential, duration of work, elevated airborne mercury levels, or potential PPE failures. Air monitoring (as described in the Air Monitoring section below) will be performed using a properly calibrated Jerome meter. Additional biological monitoring will be conducted if employees exhibit signs or symptoms of mercury exposure or if exposures exceed the applicable permissible exposure limit (PEL) identified in the Contaminant/Chemical Hazards table. Upon completion of the work, post-exposure testing will be conducted to compare against baseline values. All medical evaluations and test results will be managed by a qualified occupational health provider and maintained in accordance with applicable OSHA medical surveillance and recordkeeping requirements.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE will be selected, used, maintained, and stored in accordance with OSHA 29 CFR 1926 Subpart E, and applicable manufacturer recommendations. Engineering, administrative and/or work practice controls to minimize hazards will be implemented where feasible, followed by PPE.

MINIMUM LEVELS OF PROTECTION

Level D personal protective equipment that is to be always worn by project personnel at the site includes.

- Safety glasses or goggles as appropriate (ANSI Z87.1)
- Safety boots (ASTM-2413)
- Hardhat (ANSI Z89.1)
- High visibility vest or equivalent high visibility clothing
- Appropriate clothing (long sleeve shirts and pants) and Tyvek coveralls if required.
- Gloves cut resistant (ANSI Cut Level II or higher)

Level C PPE will be used when there is the possibility of inhalation of hazardous concentrations (or unknown concentrations) of particulates, vapors or fumes at or above OSHA PELs or pre-designated action levels (see section Air Monitoring below). Level C PPE includes.

- Modified level D PPE
 - Disposable booties or washable mercury resistant rubber boot covers; or
 - Rubber Safety boots (ASTM-2413)
 - Gloves: nitrile chemical barrier or other mercury resistant material as required
- Air purifying respirator (powered full-face (PAPR) or non-powered full face)
- Appropriate filtering media (particulate, mercury, organic vapor, or combination cartridge)

NOTE: OSC employees are given the option of using an air purifying respirator for voluntary use.



Level B is not anticipated for this project but may be made available if necessary.

Level D is the primary anticipated PPE during this project. These minimum levels of protection are considered preliminary and may change based upon initial exposure assessment and routine assessments as work progresses. No change to the specified level of protection will be made without the approval of the SHSO and in agreement with the Director HS&E.

SELECTION OF PROTECTION LEVELS

PPE will be used when project and support activities involve known, or suspected, contamination; when vapors, gases or particulates may be generated by site activities; or when direct contact with skin may occur. Respirators protect the lungs against airborne toxicants. Chemical resistant clothing protects skin from contact with harmful and absorbable chemicals.

Level D: Protection will be used when no airborne contaminant exposure is likely and job functions do not require the use of respiratory equipment or chemical resistive clothing. The equipment for this level of protection is described above and is expected to be the minimum for the project.

Level D Modified: Protection will be modified when additional contact hazards have been identified such as splash hazards and contaminated or nuisance dust.

Level C: Protection that will be provided when airborne contaminants have been identified and which require the use of air purifying respiratory equipment to keep exposures below health-based limits. Examples of respiratory protection for this project are half or full-face air purifying respirators (powered and non-powered) with appropriate cartridges (i.e. P-100 cartridges for particulate, Black Organic Vapor – VOC, Brown/Gold Acid Gas, Mercury Vapor, etc.). Level C will be required where ½ the OSHA PEL is encountered through real time monitoring or through exposure assessment.

AIR MONITORING:

Exposure monitoring for mercury work area personnel shall be conducted by the SHSO, in conjunction with the Engineer’s representative using an appropriately calibrated Jerome Meter. Guidance for clearance zones will be based on precautionary measures as described in the 2024 USDOT PHMSA Emergency Response Guidebook for dealing with Gallium or Mercury. For areas within 50 meters (~150 feet) in all directions personnel will be directed to remain clear of the area. Any area downwind with any operating personnel shall have daily monitoring completed using the Jerome meter.

All personnel in the mercury removal work area will be equipped with Modified Level D PPE as described above for the duration of the removal. Continuous air monitoring will be conducted during removal activities until impacted soils are properly containerized in drums. During storage of the removed material, if exposure monitoring data indicates respiratory protection is not necessary to keep exposures below the OSHA PEL for three days, the SHSO may request a decrease of PPE requirements from the OSC Director of HSE.

Once daily air monitoring of the storage area, using the Jerome meter, shall continue until material is sent off for disposal.

AIR MONITORING ACTIVITY PLAN

A Jerome meter will be utilized to monitor breathing zones in areas where mercury vapor is anticipated. Monitoring with the Jerome meter will continue through all phases of work within the mercury contaminated area and if levels of mercury vapor are detected to have a sustained reading over 0.025 mg/m³ for a period of 5 minutes then operations will temporarily stop. During the temporary stop monitoring with the Jerome meter will take place for an additional 5 minutes, if levels fall below 0.025 mg/m³ during that time work will resume with the above monitoring in place. Should detection of mercury vapor continue to be above 0.25 mg/m³ during this time, the work process and/or upgrading of PPE to level C shall be re-evaluated.

CONTAMINANT / CHEMICAL HAZARDS

The table below provides limits of exposure to the COC's that will be adhered to.

CHEMICAL HAZARD SUMMARY			
HAZARD	PRIMARY EXPOSURE	PEL	TLV
Mercury	Inhalation	0.1 mg/m ³	0.025 mg/ m ³
Notes: OSHA Permissible Exposure Limit (PEL) based on 8-hour, time weighted average (TWA), TLV = Threshold Limit Value			

DECONTAMINATION PROCEDURES

Decontamination of equipment and personnel will be performed as necessary to limit the potential migration of contaminants outside the project limits. All equipment and personnel will be decontaminated before leaving the property. A more detailed decontamination plan may be developed if requested.

Personnel and equipment decontamination procedures to be employed when exiting contaminated work areas at this site are summarized in the following subsections.

PERSONNEL HYGENE and DECONTAMINATION

Personnel will be made aware of any personal habit that may allow contaminants into or onto their body. All personnel will check that regularly worn PPE (i.e. hardhats and liners, eye protection, etc.) is clean and in good condition. Disposable outer PPE (coveralls, gloves, boot covers) will be worn. Any products used for personal consumption are prohibited in work areas. Break areas will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these items will be allowed.

Personnel believed to have come into direct contact with contaminated materials will decontaminate according to step 5 of the EPA Mercury Spill Guidance – 2023 which stated that they are to use warm water and anti-dandruff shampoo containing at least 1 percent selenium



sulfide. D-Wipes by Esca-tech may also be used as a wipe down method for removing mercury from contaminated skin or surfaces.

EQUIPMENT DECONTAMINATION

The SHSO will be responsible for inspecting decontaminated vehicles, equipment, and material contaminated work areas, to ensure proper decontamination. The SHSO will certify in writing that each piece of equipment utilized in the exclusion zone has been properly decontaminated.

Decontamination personnel will be required to use Level C PPE unless exposure monitoring confirms Modified Level D PPE is sufficient. The standard operating procedure for the use of high-pressure washers will be strictly followed.

HEAVY EQUIPMENT DECONTAMINATION

As a general practice, equipment, such as excavators, will remain within the work zone for the duration of the excavation activities. This ensures the minimization of the potential migration of contaminants outside the project limits. In addition, the sequence of excavation has been designed to avoid the movement of machinery and personnel over areas within the work zones that have been excavated.

Generally heavy equipment, and large materials used in potentially contaminated areas equipment, will be decontaminated as outlined below.

- Conduct gross removal of solids at point use.
- Degrease, as necessary.
- Move to the equipment decontamination area for decontamination
- Collect and handle resultant solids.
- Utilize D-Wipes as needed

TEMPORARY STORAGE and DISPOSAL of CONTAMINATED WASTES

All contaminated material shall be containerized in either a suitably lined and waterproofed roll of box suitable for transport of the material, or shall be placed in sealed drums suitable for storage and transport, or shall be placed in another approved vessel suitable for the storage and transport of the contaminated material.

Temporary storage of contaminated material in an appropriate vessel suitable for the storage and transport of the mercury contaminated material within a cordoned-off area with signage stating "Authorized Personnel Only" or similar verbiage to warn of entering the area.

Equipment and detergent (likealconox) used for decontamination will be disposed of properly. All aqueous liquids generated in the personnel and equipment decontamination process will be collected, characterized, and appropriately disposed of or run through the existing water treatment facility. Disposable PPE will be containerized with the removed contaminated material and properly disposed of.



Transport for final disposal of contaminated wastes will be performed by a firm with the appropriate licensing, placarding, and permits as required by Federal, State, and local authorities for the transport of the contaminated materials. Waste manifests will be created for transport of the materials with records being maintained onsite and in the project files.



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Mercury Contaminated Soils Removal	Date: April 3, 2026
OSC Site Supervisor: Matt Reardon	OSC Project Manager: Dan Flanigan
Project: Tonawanda Plastics	Reviewed by: Paul Mulvey, OSC Corporate Director of HSE

PREREQUISITES		
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none">• Excavators• Vacuum Pumps• PPE<ul style="list-style-type: none">○ Tyvek Suit○ Full Face Respirator○ Mercury Vapor Cartridge○ Gloves○ Chemical Protective Boots	<ul style="list-style-type: none">• Completion of equipment inspection form and subsequent daily pre-use inspections thereafter.• Defective equipment shall be red tagged from service and replaced.• Inspect all equipment and PPE prior to use	<ul style="list-style-type: none">• Trained project employees as per the HS&E program.• Authorized and competent equipment operators, laborers, as per OSHA applicable training requirements (1926.20 - 1926.21).



ACTIVITY HAZARD ANALYSIS (AHA)

Work Activity Sequence	Potential Health, Safety and Environment Hazards	Hazard Controls
<ol style="list-style-type: none"> 1. Pre-job planning and hazard communication 2. Establish work zone, exclusion zone, and decontamination area 3. Donning of required PPE (Tyvek suits, full face respirator with mercury vapor cartridges, gloves, boots) 4. Air monitoring setup 5. Entry into contaminated pit 6. Removal of contaminated soils using hand tools or mechanized equipment 7. Identification and isolation of visible elemental mercury 8. Vacuuming of elemental mercury 9. Containerization and labeling of contaminated soils and mercury waste 10. Exit from pit and decontamination procedures 11. PPE doffing and disposal 12. Site cleanup and demobilization 	<ul style="list-style-type: none"> • Exposure to mercury vapor (inhalation hazard) • Dermal exposure to mercury and contaminated soils • Ingestion hazard due to poor hygiene practices • Oxygen deficiency or hazardous atmosphere in pit • Heat stress due to Tyvek suits and respirator use • Slips, trips, and falls within pit or on uneven/soft ground • Overexertion and ergonomic strain from manual digging • Improper use or failure of respiratory protection • Cross-contamination outside exclusion zone • Improper handling or release of elemental mercury during vacuuming • Equipment hazards from vacuum unit operation • Limited access/egress from pit • Communication challenges due to PPE 	<p>Engineering Controls:</p> <ul style="list-style-type: none"> • Establish designated exclusion, contamination reduction, and support zones • Provide adequate ventilation if feasible • Use intrinsically safe or appropriate equipment where required <p>Administrative Controls:</p> <ul style="list-style-type: none"> • Conduct pre-task briefing • Follow applicable requirements under OSHA 29 CFR 1926 and HAZWOPER (29 CFR 1910.120) • Limit exposure time through task rotation • Implement air monitoring for mercury vapor levels • Utilize heat stress monitoring program (work/rest cycles, hydration) • Maintain strict hygiene practices (no eating, drinking, or smoking in work zone) • Clearly label and properly store all contaminated materials • Ensure proper waste disposal per EPA and state regulations • Maintain communication between entrants and attendants <p>PPE Controls:</p> <ul style="list-style-type: none"> • Tyvek or equivalent disposable protective suits • Full face respirator with mercury vapor cartridges (change-out schedule enforced) • Inner and outer chemical-resistant gloves • Chemical-resistant boots • Hard hat and hearing protection as needed <p>Safe Work Practices:</p> <ul style="list-style-type: none"> • Inspect all PPE and respirators prior to use • Ensure proper fit testing and training for respirator use • Avoid direct contact with contaminated materials • Use slow, controlled movements to minimize dust and vapor release



ACTIVITY HAZARD ANALYSIS (AHA)

- Immediately contain and vacuum any visible elemental mercury
- Do not dry sweep contaminated soils
- Follow proper donning/doffing procedures to prevent contamination
- Decontaminate tools and equipment before removal from exclusion zone
- Use buddy system at all times

Emergency Procedures:

- Evacuate the area if elevated mercury vapor levels are detected above permissible exposure limits
- Provide immediate medical evaluation for suspected exposure
- Spill response plan in place for mercury release
- First aid and emergency eyewash available on site
- Emergency contact numbers communicated to all personnel



ACTIVITY HAZARD ANALYSIS (AHA)

Field Notes and Changes

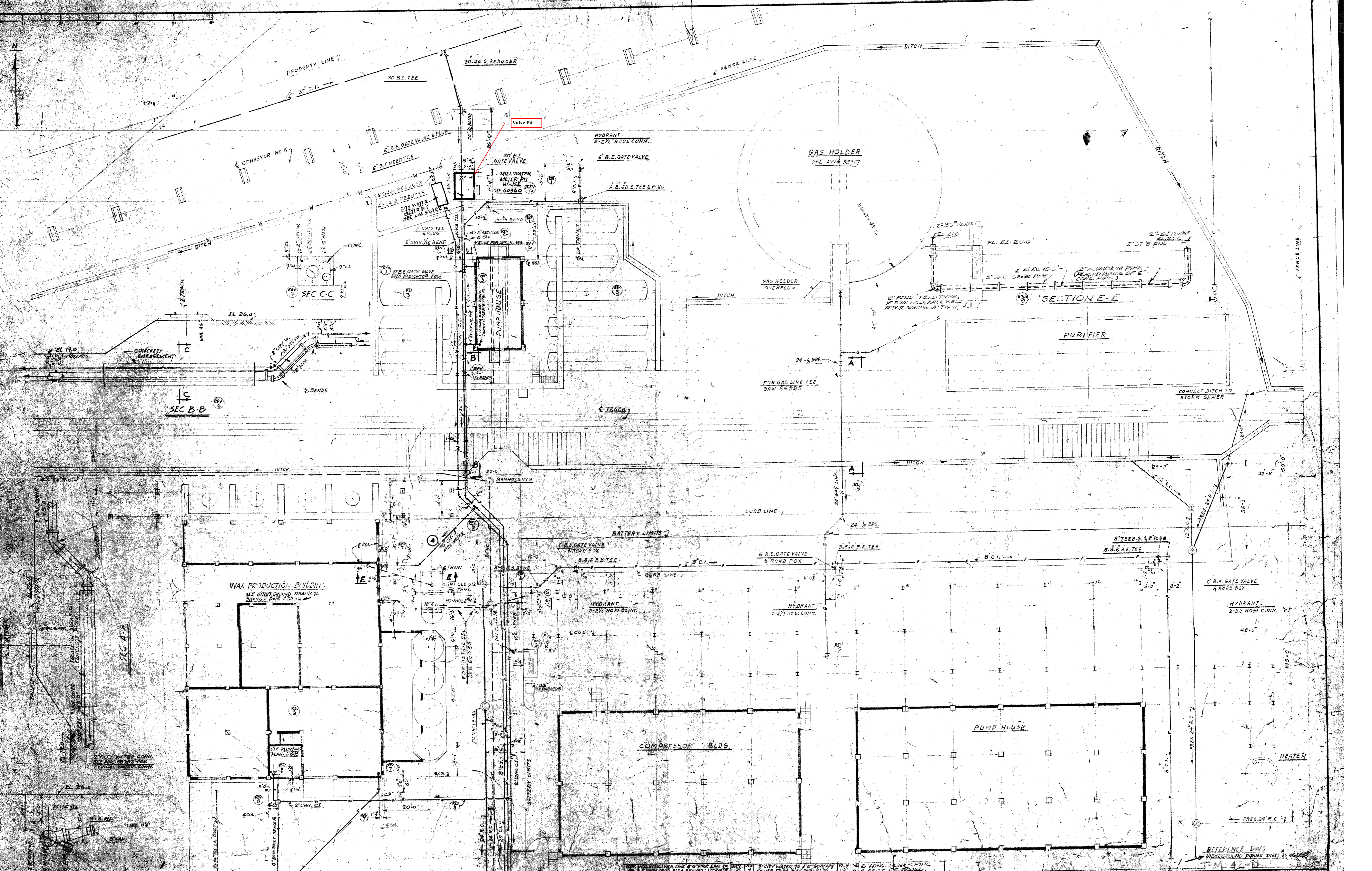
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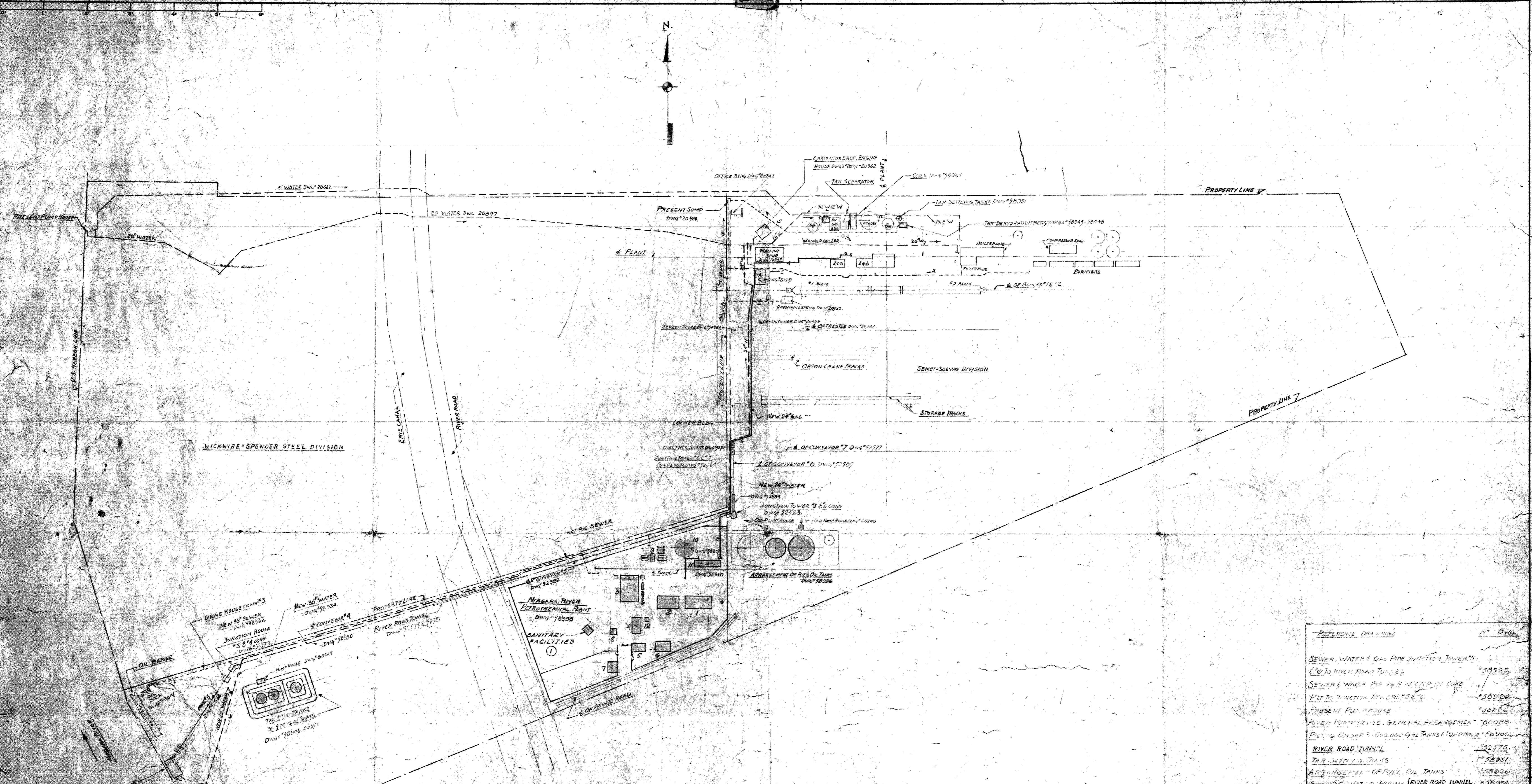
Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.

Appendix B – Historical Figures





This drawing is the property of Semet-Solvay Engineering Division, New York, and is loaned subject to the usual conditions and is not to be reproduced, copied or otherwise disposed of and is not to be used to furnish information for the making of drawings, prints or apparatus or parts thereof, except when otherwise authorized in writing.		SEMET-SOLVAY ENGINEERING DIVISION ALLIED CHEMICAL & DYE CORPORATION NEW YORK, N. Y.		SEMET-SOLVAY DIVISION NIAGARA RIVER PETROCHEMICAL PLANT UNDERGROUND PIPING (SHEET NO. B)	
DATE 4-22-52 BY R. H. TRACED DATE 5-20-52 BY T. A. DUNN DATE 10-11-52 BY R. H. TRACED	DATE 5-6-53 BY R. H. TRACED DATE 5-10-53 BY R. H. TRACED DATE 5-10-53 BY R. H. TRACED	DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED	DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED	DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED	DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED DATE 7-20-53 BY R. H. TRACED
SEMET-SOLVAY ENGINEERING DIVISION ALLIED CHEMICAL & DYE CORPORATION NEW YORK, N. Y.			SEMET-SOLVAY ENGINEERING DIVISION ALLIED CHEMICAL & DYE CORPORATION NEW YORK, N. Y.		
DRAWN R. H. TRACED SCALE 1/8" = 1'-0" DESIGNED FOR SALE NO. 6073308			CHECKED [Signature] DATE STARTED 7-20-52 APPROVED [Signature] DATE DRAWING 8-15-52 DATE ISSUED 8-15-52 SHEET NO. 60054		



- 1 - PROCESS PUMP HOUSE
- 2 - COMPRESSOR BLDG.
- 3 - PRODUCTS BLDG.
- 4 - STORE & MACHINE SHOP
- 5 - OFFICE BLDG.
- 6 - LABORATORY
- 7 - LOCKER BLDG.
- 8 - L.H. SUBSTATION
- 9 - REBOILERS, PUMP HOUSE & TANKS
- 10 - GAS HOLDER
- 11 - GAS PURIFIER
- 12 - FIRE PUMP HOUSE

REFERENCE DRAWINGS	N ^o DWG.
SEWER, WATER & GAS PIPE JUNCTION TOWER'S EYE TO RIVER ROAD TUNNEL	59025
SEWER & WATER PIPE IN N.W. CORNER COKE PIT TO JUNCTION TOWER'S EYE	59024
PRESENT PUMP HOUSE	56806
RIVER PUMP HOUSE GENERAL ARRANGEMENT	60028
PIPE UNDER 3-500,000 GAL TANKS & PUMP HOUSE	59906
RIVER ROAD TUNNEL	52575
TAR SETTLING TANKS	57801
ARRANGEMENT OF FULL OIL TANKS	55826
SEWER & WATER PIPING (RIVER ROAD TUNNEL)	55804
500,000 GAL TANK ARRANGEMENT	60252
NEW PUMP HOUSE AT 500,000 GAL TANKS	60251
OIL TANKS	56806
CITY WATER LINES	56802
CONVEYOR 4	52554
COKE DOCK	52556
CONVEYOR 2 & 3	52536
CONVEYOR 5	52532
JUNCTION TOWER'S EYE	52533
TAR DEHYDRATION BUILDING	5045-5048
TAR PUMP HOUSE	60253
NIAGARA RIVER PETROCHEMICAL PLANT	57800

T-M-40-J

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