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ENVIRONMENTAL
ASSESSMENT &
REMEDIATIONS

September 26, 2011

Robert D. DeCandia Jr., PE
Environmental Engineer II
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 11th floor
Albany, NY 12233-7015

RE: Solvent Finishers, 601 Cantiague Rock Road, Jericho, NY, Site # 1-30-172

Dear Mr. DeCandia;

Environmental Assessment and Remediations (EAR) has been contracted by New York State Department of Environmental Conservation (NYSDEC) to test, design and construct an Air Sparge/Soil Vapor Extraction (AS/SVE) Interim Remedial Measure (IRM). The AS/SVE IRM will be designed to remediate unsaturated soil and shallow ground water in compliance with air discharge requirements. Development of the IRM will include source area investigation and pilot testing. Within this scope of work, the NYSDEC has included the investigation of a potential on-site underground storage tank (UST). The following letter encompasses EAR's intended IRM work plan. A general site map has been provided as Figure 1.

1.0 Site History Review

In preparation for the work activities detailed herein, site specific information acquired from documentation of previous site activities provided by the NYSDEC and/or its engineers (Camp Dresser & McKee (CDM)) will be reviewed and utilized in the scope of work.

2.0 Site Preparation/Mobilization

EAR personnel will visit the site in order to determine a practical site layout including, but not limited to, equipment staging areas, site access, and equipment decontamination facilities. While on-site, EAR personnel will also review markings and reports of prior geophysical surveys and boring locations identified in the file review. Access to the site will be arranged with the NYSDEC and/or its engineers, and the property owners/tenants. Prior to drilling activities, the One Call Markout Center will be notified of the on-site subsurface work. Property owner(s)/business manager(s) will be notified of any site work prior to its execution.

3.0 Confirmation Soil Sampling of Chemicals of Concern

Analytical results of soil samples collected 5 feet below grade at MIP-7, located along the western extent of the south side of the building, reported concentrations of Bis(2-ethylhexyl)phthalate (DEHP) at 120,000 ug/kg (98, 000 ug/kg detected in the 20:1 diluted sample) (see Figure 2). 3.1 ug/L were detected in field blank collected the following day. This compound was not detected in any other soil or groundwater samples collected during the April 2008 sampling event. Following soil and groundwater sampling events did not include analysis of analytes listed in EPA 8270, therefore it is unknown if and where the contaminant of concern is present without further investigation. Due to the physical properties of DEHP, personnel working within the work zone will wear Level B personal protective equipment (PPE) until the presence and levels of the chemical of concern is defined.

To confirm the concentrations of DEHP, soil samples will be collected directly adjacent to MIP-7 and 5' north, south, east and west of MIP-7 from 4'-6' below grade by hand auger. These samples will be submitted to Test America Laboratories for EPA Method 8270 analysis. All tooling that comes in contact with the soil will be decontaminated utilizing n-hexane and a distilled water rinse. Once the analytical results have been received and evaluated, the appropriate level of PPE will be determined.

4.0 Excavation Investigation of the Potential Underground Storage Tank

The March 2011 geophysical survey conducted by Advanced Geological Services, supervised by CDM, revealed an anomaly approximately 4 feet below grade near the western extent of the south side of the building, near the building's electrical compound. EAR will conduct a one day excavation investigation to remove the overburden from the area marked by CDM to visually identify the anomaly. Upon visual confirmation of the anomaly, a sample of the contents will be collected for EPA Method 8260 and 8270 laboratory analysis. The excavation will be then be backfilled with the native material and temporarily topped with the original asphalt and temporarily secured with safety fencing. A letter report detailing the findings and laboratory analytical results of samples collected during the excavation investigation will be submitted to the NYSDEC.

5.0 Soil Profile

To further delineate the extent of soil and shallow groundwater contamination at the site, soil samples will be collected at one of the proposed soil vapor extraction (SVE) points (see Section 6.0). Prior to the installation of the SVE point, soil samples will be collected via split spoon sample collection from grade to 95 feet below grade within 4.25 inch hollow stem augers. Depth to groundwater is estimated to be approximately 85 feet. Upon collection, each sample will be logged for lithology and screened for volatile organic compounds (VOCs) with a Photovac® Model 2020 Photo-Ionization Detector (PID) or equivalent by an on-site geologist, and stored in labeled zip lock bags. Prior to each use, the PID will be calibrated to the manufacturer's recommended calibration standard and ambient air.

Soil samples retained for laboratory analysis will be based on physical observations, PID readings and discussions with the NYSDEC. Once observations are recorded, the samples retained for laboratory analysis will be immediately placed into sealed jars. Samples will be submitted to Test America Laboratories for analysis via EPA Method 8260 and 8270 analysis with Category B deliverables. The sample containers and transport cooler will be provided by the laboratory. Upon collection, samples will be immediately placed in the cooler with ice to maintain a temperature of 4 degrees Celsius. The samples will be stored at EAR's office according to laboratory protocol and subsequently delivered by the lab provided courier service. Chain-of-Custody forms will be completed and possession maintained between sampling personnel and the laboratory during the sampling event. Sampling will be conducted according to EAR's standard procedures to prevent cross-contamination and to assure sample integrity.

6.0 Pilot Test Wells, Monitoring Network and Pilot Test

For testing purposes, one or two air sparging (AS) points, a SVE well cluster and four nested influence monitoring points (NIMP-1, 2, 3, 4) will installed on the station property for the purpose of the AS/SVE pilot test. The AS, SVE and NIMP wells will be installed via hollow stem auger drilling methods (see Figure 2 for a conceptual layout of pilot test wells and monitoring points). All wells and monitoring points will be finished at grade with a flush to grade, bolt down manhole. Well casings will be secured with a locking well cap and Masterlock. The final pilot test system design including well depths, screening intervals and well layout will be based on the findings and analytical results of the continuous soil profile discussed in Section 5.0.

6.1 Air Sparge Pilot Test Well

Sparge point(s) will be designed such that the screened section will influence the shallow groundwater table as directed by the NYSDEC. The length of 2 inch diameter SCH 40 PVC riser will be based on the soil profile to

install a 2 foot x 2 inch diameter SCH 40 PVC 0.02 inch slotted screen at the appropriate depth. The screened sections of the AS point will be surrounded by #1 gravel pack to 1 foot above the screen. Bentonite seals will be installed from 2 to 4 feet below grade and above the gravel pack. The remaining annulus between bentonite seals will be filled with ASTM bentonite grout installed by tremie installation methods. See Figure 3 for a conceptual illustration of the sparge point construction.

6.2 Soil Vapor Well Cluster

If inspection of the entire soil profile, from grade to beneath the water table interface as proposed in Section 5.0, indicates signs of contaminated soil and shallow groundwater by evidence of visual inspection, PID readings and or laboratory analysis, four vent wells will make up the SVE well cluster. The deepest SVE well will be constructed of 65 feet x 4 inch diameter SCH 40 PVC riser and 30 feet x 4 inch diameter SCH 40 PVC 0.02 inch slotted screen, such that the vent well extends 10 feet beneath the water table interface (total well depth of 95 feet). Extending the vent well into the water table enables continuous venting of the unsaturated zone with a fluctuating groundwater table as well as providing a conduit to collect shallow groundwater data/samples.

Subsequently, shallower vent points will be constructed of 20 feet x 4 inch diameter SCH 40 PVC 0.02 inch slotted screen and 45 feet, 25 feet and 5 feet SCH 40 PVC riser (total well depths of 65 feet, 45 feet and 25 feet, respectively). The screened sections of each SVE point will be surrounded by #1 gravel pack to 1 foot above the screen. In vent wells constructed with a total well depth greater than 30 feet, 2 foot bentonite seals will be installed from 2 to 4 feet below grade and atop the gravel pack. The remaining annulus between bentonite seals will be filled with ASTM bentonite grout installed by tremie installation methods. In vent wells constructed with a total well depth less than 30 feet, the gravel pack will be topped with a bentonite seal to 2 feet below grade utilizing no grout. See Figure 3 for a cross section of the conceptualized SVE well construction to apply vacuum to the entire unsaturated zone. If inspection of the soil profile does not indicate continuous impact from grade, depths, screened intervals and/or number of vent points will be adjusted and/or eliminated.

6.3 Nested Influence Monitoring Points

To monitor various influences of the pilot tests (see Section 6.4), four NIMPs will be installed at distances of 10 feet, 20 feet, 30 feet and 40 feet from the center of the SVE well cluster and distances of 5 feet and 10 feet from the AS. The layout of the proposed NIMPS has been included on Figure 2. Each individual NIMP will be composed of multiple monitoring points installed in the same boring. The individual points will be constructed of a 1 foot x 1 inch diameter SCH 40 PVC 0.02 inch screened section installed at varying depths above the water table to monitor the influence of the pilot venting tests. The screened section of the monitoring points will be installed commensurate with the mid-point of the screened section of the vent points. An additional monitoring point will be installed just below grade (total well depth of 5.5 feet) to monitor near surface influence. Each screened section will be surrounded by #1 Gravel Pack approximately 1 foot above and 1 foot below the screened section. A 1 foot bentonite seal will be installed above and below the gravel pack layers. The remaining annulus will be filled with ASTM bentonite grout installed by tremie installation methods. See Figure 5 for a cross section of the conceptualized NIMP well construction.

In addition to the 1 inch diameter monitoring points, two 0.5 inch diameter monitoring points will be installed in the NIMPs 5 feet and 10 feet from AS-1 (NIMP-1 and NIMP-2). A 5 foot section of SCH 40 PVC 0.02 inch screen will be installed such that the screened section will straddle the water table interface to monitor fluctuations in groundwater levels and dissolved oxygen monitoring during the sparge tests. The additional monitoring points can also be used to collect shallow groundwater data/samples. A 1 foot section of SCH 40 0.02 inch screen will be installed at a depth commensurate with the sparge point, as described in Section 6.1. The lengths of the 0.5 inch SCH 40 PVC risers of each additional monitoring point will be based on confirmed groundwater elevation and depth of sparge point installation. See Figure 5 for a cross section of the conceptualized NIMP well construction.

6.4 Pilot Test

Pilot testing will be conducted at this site to assist in the design of the AS/SVE IRM. The results of the test will be used to establish the requirements of the mechanical components and the layout, depth and spacing of AS/SVE wells to remediate shallow groundwater impact as directed by the NYSDEC. The pilot test will be a multiple day test and consist of three parts; the SVE only, the AS only, and the AS/SVE combined tests at various air flow rates and applied pressures.

In addition to the NIMPs, existing sub-slab monitoring points (SV-01, SV-02 and SV-03) will be monitored to evaluate the influences of the pilot test beneath the building. See Figure 1 for the locations of the existing SV points.

6.4.1 Vent Test

Prior to testing vacuum and VOCs will be recorded from the NIMPs. Vacuum readings will be recorded using a digital manometer and VOCs will be recorded using a PID. Utilizing a regenerative blower, vacuum will be applied to each individual vent point separately and all at one time at multiple air flow rates of 30, 60 and 90 CFM until asymptotic conditions have been established. Vacuum and VOCs will be recorded at the NIMPs 1 – 4 in set increments during each flow rate of the test to determine the radius of influence. The air flow rate, VOCs and vacuum levels will be periodically recorded from the test equipment during the test. A grab air sample will be collected into a laboratory provided SUMMA canister for analysis of effluent air from the blower effluent exhaust stack, prior to shutdown. The air samples will be submitted to Test America for laboratory analysis of TO-15 for the site specific list of parameters identified in previous investigations including tentatively identified compounds (TICs).

6.4.2 Sparge Test

Prior to testing, ambient pressure, VOCs, dissolved oxygen levels and water levels will be recorded from NIMPs 1 and 2. Dissolved oxygen levels will also be recorded from the sparge point(s). Pressure readings will be recorded using a digital manometer, VOCs will be recorded using a PID, dissolved oxygen levels will be recorded utilizing a flow through cell and multi-parameter probe and water levels will be recorded with a water level meter. Utilizing an air compressor, pressure will be applied to the sparge point(s) separately and then combined if more than one AS is installed, at multiple pressures of 5, 7 and 10 psi until asymptotic conditions have been established. VOCs and water levels will be recorded at NIMPs 1 and 2 in set increments during each pressure setting of the test. The dissolved oxygen levels in the NIMPs and the sparge point(s) will be recorded immediately after the sparge test has been completed.

6.4.3 Combined Sparge and Vent Test

The final test will combine both AS and all points in the SVE cluster to observe influence during combined operations. The flow rates and air pressures that produced the most desirable results of the individual tests will be used during the combined AS/SVE test. Air flow rates, VOCs and vacuum/pressure levels will be monitored in set increments throughout the testing. A grab air sample will be collected into a laboratory provided SUMMA canister for analysis of effluent air from the blower effluent exhaust stack, prior to shutdown. The air samples will be submitted to Test America for laboratory analysis of TO-15 for the site specific list of parameters identified in previous investigations including tentatively identified compounds (TICs).

7.0 Health and Safety

As discussed in Section 3.0 the appropriate level of PPE will be determined upon review and evaluation of the confirmatory samples collected in the vicinity of MIP-7. At a minimum, all personnel in the work zone will be donned in Level C PPE. All workers wearing Level C PPE or greater have been medically cleared and are included in EAR's Reparatory Protection Program. All EAR field personnel have completed the 40-hour OSHA HAZWOPER training and are current with the annual 8-hour refresher courses. All EAR field personnel

receive training in basic First Aid and CPR A Health & Safety Plan (HASP) consistent with NYSDEC Division of Environmental Remediation (DER-10) has been prepared and will be provided to all field personnel (A copy has been submitted to the NYSDEC and is also available upon request).

8.0 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) was planned with systematic actions necessary to provide a measure of protection for downwind, offsite receptors from airborne contamination during ground-intrusive activities in accordance with DER-10. The CAMP document has been prepared for this site and will be provided to all related personnel involved in the scope of the work (A copy has been submitted to the NYSDEC and is also available upon request).

9.0 Waste Disposal

All waste water and soil cuttings generated during site activities will be stored in separate, properly labeled, 55 gallon storage drums. All investigation derived waste (IDW) will be stored in the onsite roll off dumpster managed by CDM. The drums will be staged on-site in a designated area. Once the 55 gallon drums have reached maximum capacity, waste disposal characterization will be conducted and disposal will be arranged with a NYSDEC Region 1 Response Contractor (Fenley & Nicol Environmental). Pertinent information regarding disposal facilities will be provided to the NYSDEC and its engineers prior to transportation of any wastes offsite.

10.0 Data Validation and System Design

All samples collected will be validated in accordance with the DER-10, Data Usability Summary Report (DUSR) guidance. A qualified representative from EAR will generate the DUSR for all samples submitted to a state contracted laboratory (Test America Laboratory) with Category B deliverable analytical reports and will be submitted to the NYSDEC.

Upon completion of the pilot test described above, an IRM AS/SVE system will be designed to remediate soil, shallow groundwater and comply with air discharge requirements. The remedial design will be implemented upon review, comment and approval by the NYSDEC.

If you have any questions or comments, please feel free to contact me at 631-447-6400 ext 153 or via email at JBrown@enviro-asmnt.com.

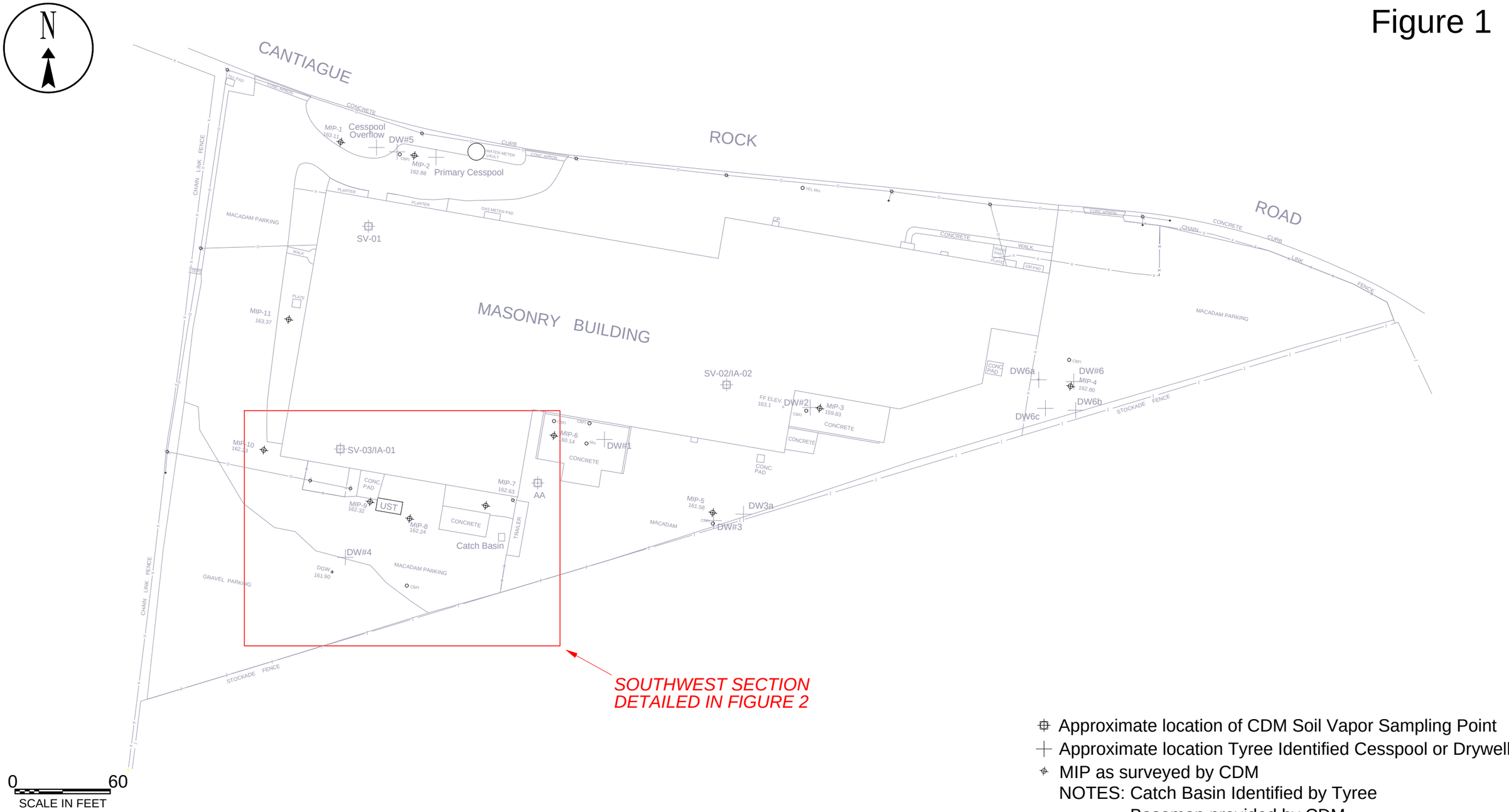
Sincerely,

Environmental Assessment & Remediations

Jaime Brown
Project Manager

FIGURES

Figure 1



- Approximate location of CDM Soil Vapor Sampling Point
- Approximate location Tyree Identified Cesspool or Drywell
- MIP as surveyed by CDM

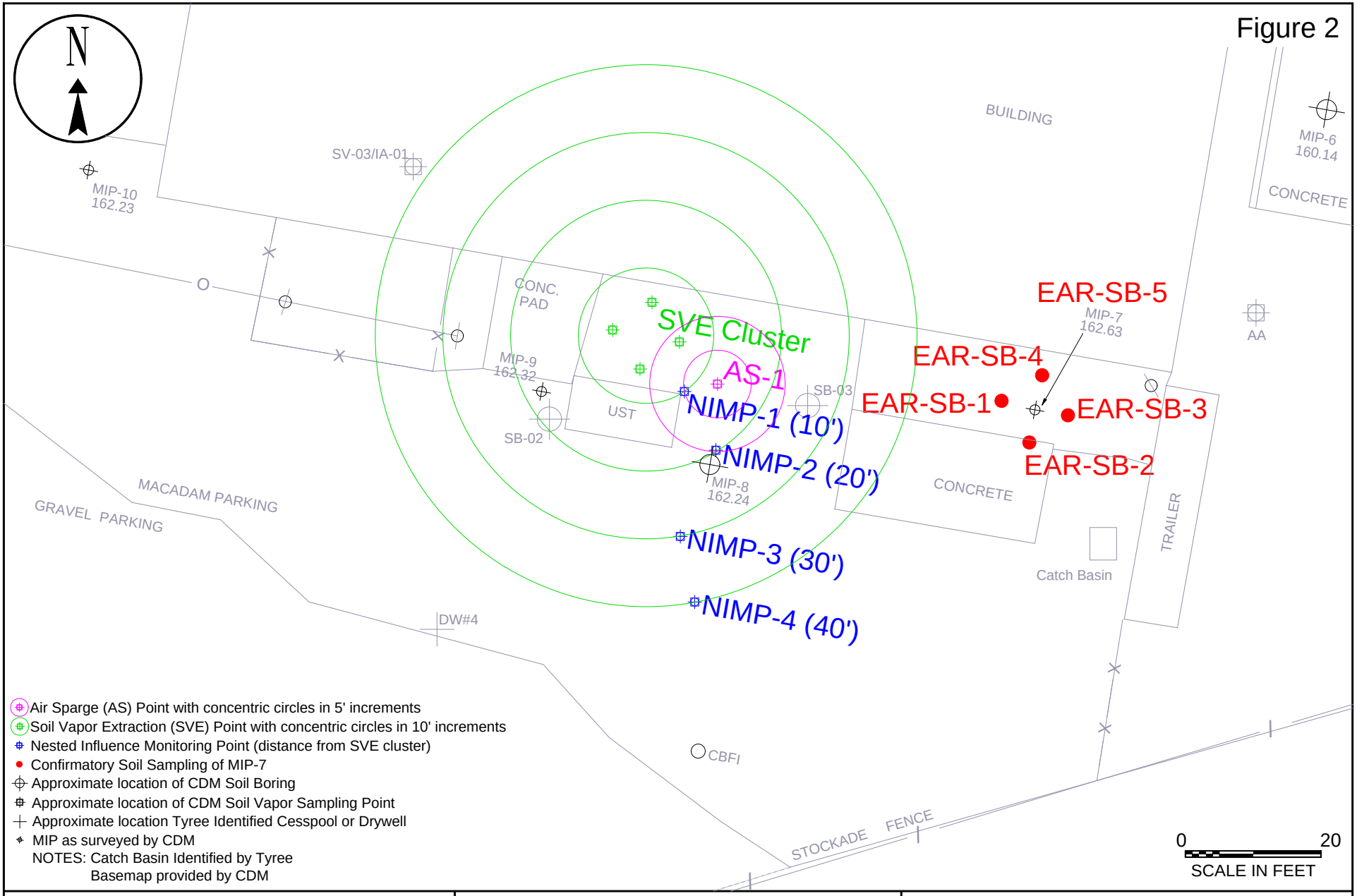
NOTES: Catch Basin Identified by Tyree
Basemap provided by CDM

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Site Map

Solvent Finishers
601 Cantiague Rock Road
Jericho, NY
Site # 1-30-172

Figure 2



ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Southwest Section Site Map

Solvent Finishers
601 Cantiague Rock Road
Jericho, NY
Site # 1-30-172

225 Atlantic Avenue
Patchogue, New York 11772
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Figure 3

CONCEPTUAL PILOT TEST SPARGE POINT

PROJECT DETAILS

PROJECT/SITE NAME	DEC-JERICHO601
SITE ADDRESS	Solvent Finishers 601 Cantiague Rock Road Jericho, NY
SITE ID	1-30-172
DRILLING METHOD	Hollow Stem Auger
BOREHOLE DIAMETER	7.5-inch diameter
COMMENTS	The length of riser will be based on the soil profile to install the screen at the appropriate depth

WELL CONSTRUCTION

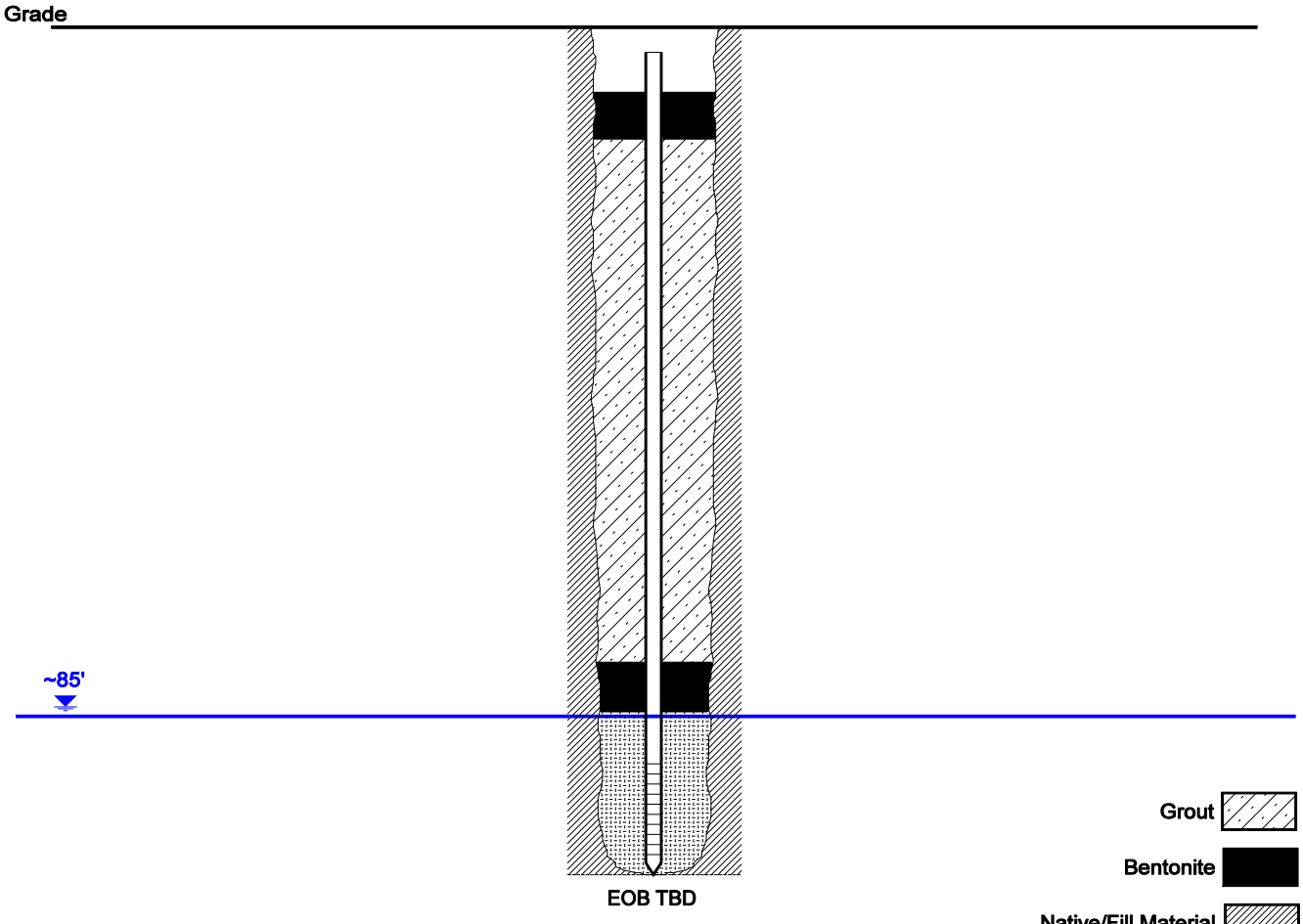
CASING
Type PVC Diameter 2" Length TBD

SCREEN
Type PVC Diameter 2" Slot 0.020 Length 2'

GRAVEL PACK #1 Gravel from 1' above screen to EOB

CASING SEAL Bentonite from 2'-4' and a 1' seal above the gravel and ASTM bentonite grout tremie installed inbetween bentonite layers

WELL DESIGN



TBD - To be determined
EOB - End of Boring
NOT TO SCALE

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Figure 4

CONCEPTUAL PILOT TEST VENT WELLS

PROJECT DETAILS

PROJECT/SITE NAME	DEC-JERICHO601
SITE ADDRESS	Solvent Finishers
	601 Cantiague Rock Road
	Jericho, NY
SITE ID	1-30-172
DRILLING METHOD	Hollow Stem Auger
BOREHOLE DIAMETER	10-inch diameter
COMMENTS	Each vent well will be installed in seperate boreholes. Boreholes will be installed in a cluster.

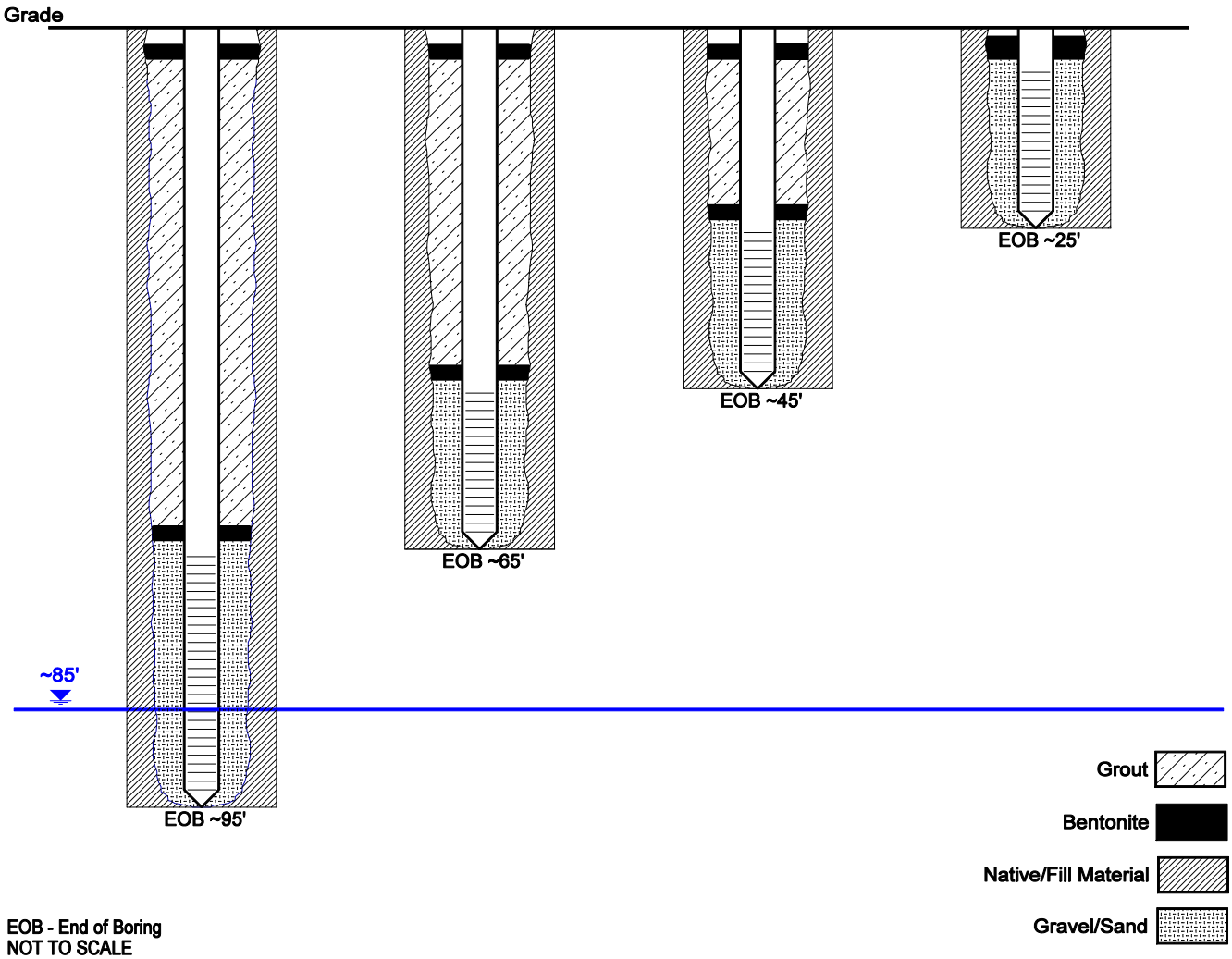
WELL CONSTRUCTION

4 - 4" Diameter Vent Wells*

Total Well Depth	Screen Length*	Bentonite	ASTM Grout	#1 Gravel Pack
25'	20'	1'-4'	none	4'-25'
45'	20'	2'-4' and 22'-24'	4'-22'	24'-45'
65'	20'	2'-4' and 42'-44'	4'-42'	44'-65'
95'	30'	2'-4' and 62'-64'	4'-62'	64'-95'

*Sch 40 PVC riser and 0.020 slotted, sch 40 PVC screen

WELL DESIGN



EOB - End of Boring
NOT TO SCALE

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Figure 4

CONCEPTUAL NESTED INFLUENCE MONITORING POINTS

PROJECT DETAILS

PROJECT/SITE NAME	DEC-JERICHO601
SITE ADDRESS	Solvent Finishers
	601 Cantiague Rock Road
	Jericho, NY
SPILL NUMBER	1-30-172
DRILLING METHOD	Hollow Stem Auger
BOREHOLE DIAMETER	10-inch diameter
COMMENTS	4 NIMPs will be installed 10', 20', 30' and 40' radiating from the vent well cluster

WELL CONSTRUCTION

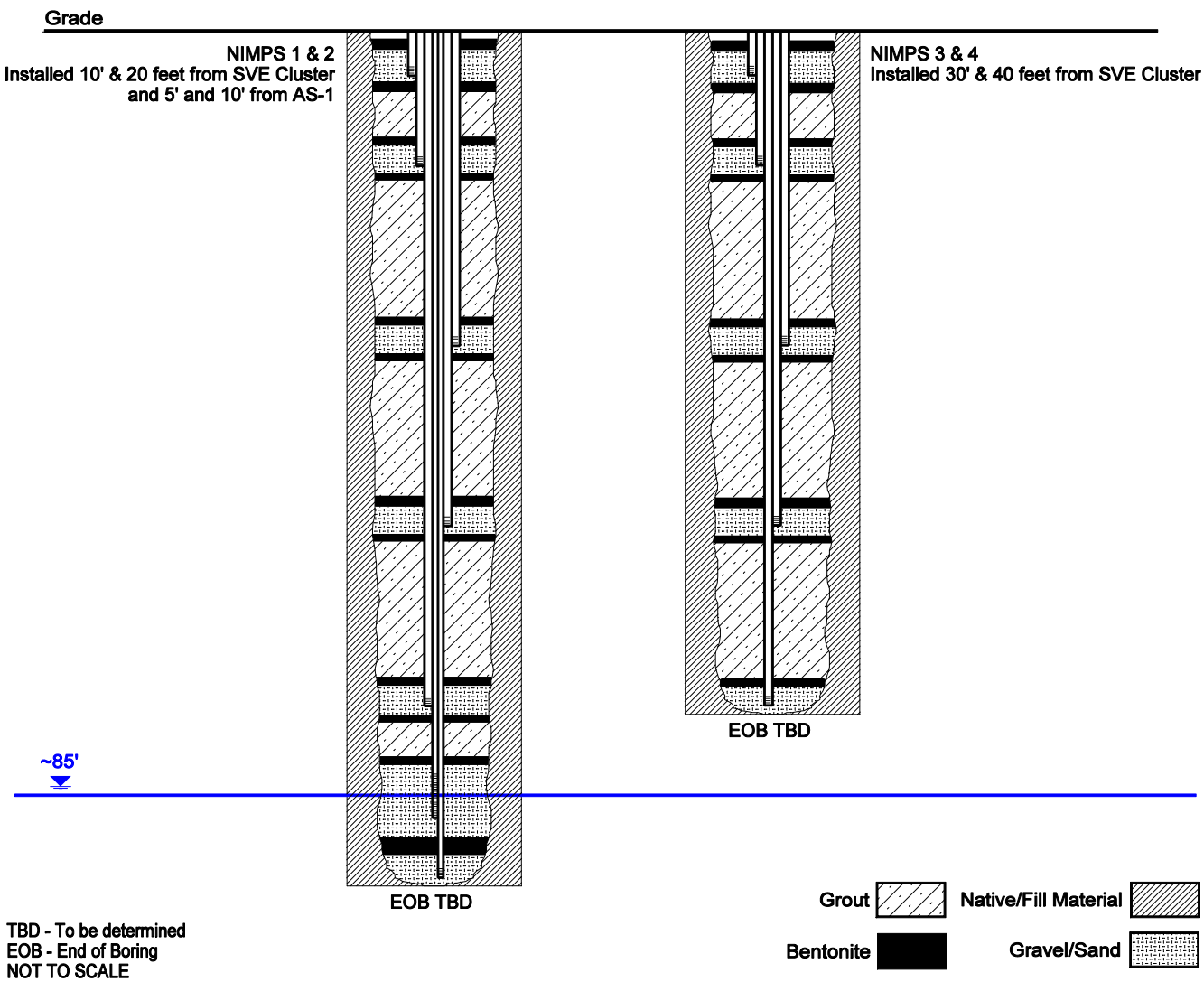
5 - 1" diameter PVC points with 1' - 0.020" screened section.

GRAVEL PACK	#1 Gravel from 1' above & below the screen
BENTONITE	1' layers above and below the gravel pack
GROUT	tremie installed between bentonite layers

2 additional - 0.5" diameter PVC points in NIMP-1 & NIMP-2

SCREENS	5' intercepting the water table & 1' screen below the water table
GRAVEL PACK	#1 Gravel from 1' above & below the screen
BENTONITE	1' layers above the gravel pack
RISER	lengths will be based on SVE & AS well design

WELL DESIGN



TBD - To be determined
EOB - End of Boring
NOT TO SCALE