Summary of Activities at Marina Cliffs Condominium Association

- Time-Critical and Non-Time-Critical Removal Actions were completed by Conestoga-Rovers & Associates (CRA) on behalf of the Marina Cliffs/Northwestern Barrel Site Performing Parties at the Properties immediately adjacent to the Marina Cliffs/Northwestern Barrel Site from July 2002 through April 2010. A site plan, identifying the Properties, is presented on Figure 2.1.

- Investigation activities were initially completed between October 2002 and March 2003. Based on the analytical results during the initial investigation activities, it was determined that PCBs and lead exceeded USEPA residential clean-up levels in shallow soils at the Marina Cliffs Condominium property (see Figure 3.2).

- Time-Critical Removal Action construction activities were completed at the Marina Cliffs Condominium property from May to July 2004; the activities included the excavation and off-site disposal of approximately 1,359 cubic yards of PCB and/or lead impacted soils followed by restoration of disturbed areas including backfilling/compacting excavation areas with clean imported backfill, placing asphalt, concrete sidewalk or concrete curbing, placing topsoil and/or sod, as appropriate, to previous grade elevations, and final landscaping with trees, shrubs, and bushes, etc. The final limits of excavations are shown on Figure 3.1.

- Based on the analytical results during the initial investigation activities, it was also determined there were three discrete areas on the Marina Cliffs Condominium property with elevated concentrations of VOCs (see Figure 3.2): between Building Nos. 1 and 2; north of Building No. 2; and north of Building No. 4.

- Additional investigation activities were completed at the Marina Cliffs Condominium property between October 2004 and May 2005. These additional investigation activities included, but were not limited to, the installation of drain tile depressurization systems in four Marina Cliffs Condominium buildings (Building Nos. 1 through 4) and performing a full-scale ISCO pilot study using the BIOX® technology in the three discrete areas with VOC-impacted subsurface soils (see Figure 3.3).

- Investigation activities also included the collection and analyses of soil gas samples from three gas probe locations (GP-2 through GP-4) and indoor air samples (pre- and post-ISCO pilot study) from the basement of four units at the Marina Cliffs Condominium property (Units 1J, 2A, 3J, and 4A).

- Additional investigation, to evaluate the effectiveness of the BIOX® technology, was completed at the Marina Cliffs Condominium property in February and May 2005.

- Based on this additional investigation, it was determined there were two remaining areas on the Marina Cliffs Condominium property with elevated concentrations of VOCs (see Figure 3.4): between Building Nos. 1 and 2; and north of Building No. 4.

- A focused assessment of estimated current and future risks to human health associated with potential residential exposure to soils, garden produce and indoor air and potential construction/utility worker exposure to soils and groundwater was completed and submitted to USEPA in 2006. Based on this risk assessment, it concluded that Non-time-Critical Removal Actions were necessary for the future construction/utility worker exposure pathway, to be protective of human health and the environment.

- Non-Time-Critical Removal Action activities were completed between June 2007 and August 2007 and included, but were not limited to, the continued operation of drain tile depressurization systems in four Marina Cliffs Condominium buildings (Building Nos. 1 through 4) and performing another round of ISCO treatment at the two remaining areas on the Marina Cliffs Condominium property (see Figure 3.5). Removal Action activities also included the completion of indoor air sampling in Building Nos. 1 and 4 during ISCO treatment to ensure that concentrations of VOCs in indoor air in residential units immediately adjacent to the areas being treated remained at or below acceptable levels.

- Additional investigation, to evaluate the effectiveness of the BIOX treatment, was completed at the Marina Cliffs Condominium property in August 2007.

- Based on this additional investigation, it was concluded that the BIOX treatment decreased the VOC concentrations in subsurface soils on the Marina Cliffs Condominium property, however, there were still two smaller areas on the property with elevated concentrations of VOCs (see Figure 3.6): between Building Nos. 1 and 2, starting at a depth of 8 feet below the ground surface; and north of Building No. 4, starting at a depth of 4 feet below the ground surface.

- A supplemental risk assessment was completed in 2008 to evaluate the effectiveness of BIOX in achieving acceptable VOC risk-based concentrations in the subsurface soils for the future construction/utility worker scenario. This assessment concluded the additional BIOX treatment implemented at the property was effective in achieving acceptable VOC risk-based concentrations in subsurface soils for future construction/utility worker scenario, however, the potential exists that subsurface soils with residual VOC contamination could be disturbed during future construction activities and appropriate use restrictions/institutional controls would be necessary.

- In October 2008, WDNR collected indoor air samples from Building Unit 1J. During the sample collection it was noted that the drain tile depressurization system in Unit 1J was not operating.

- Subsequently, the Performing Parties completed the following activities on the Marina Cliffs Condominium property from December 2008 to April 2010:

    - Collected an indoor air sample from Unit 1J (without the fan operating) in December 2008
    - Repaired the drain tile depressurization system in Unit 1J, including installation of a new fan, in January 2009
    - Collected an indoor air sample from Unit 1J (with the fan operating) in February 2009
    - Inspected all the drain tile depressurization systems (Unit 1J, Unit 2A, Unit 3J, Unit 4A) again in February, March, and April 2010
    - Replaced a sump pump in the sealed sump in Unit 3J in April 2010

- The two indoor air samples collected from Unit 1J in October 2008 and December 2008, when its drain tile depressurization system was not operating, exhibited concentrations for two specific VOCs that exceeded WDNR's indoor air action levels. The concentrations of VOCs detected during were however within the USEPA's acceptable excess cancer risk range, but above the risk level generally used by USEPA as the point of departure for determining remediation goals.

- Between September 2009 and January 2010, representatives of USEPA, WDNR, the Performing Parties, and CRA discussed the closure requirements for the Properties. USEPA indicated it would issue a final release of the Properties contingent upon the Performing Parties:

    - Executing the AOC for completing Removal Actions at the Properties
    - Providing a Final Report to USEPA summarizing all work that has been completed
    - Confirming indoor air quality within the four buildings on the Marina Cliffs Condominium property with drain tile depressurization systems exhibit concentrations below WDNR indoor air action levels
    - Executing a Post-Removal Site Control Agreement with the Marina Cliffs Condominium Corporation
    - Registering the two discrete areas with VOC-impacted subsurface soils exceeding PRGs for an industrial worker on the State's GIS Registry (see Figure 4.1)
    - A draft Final Report, including a summary of all Removal Actions, was prepared and submitted to U.S. EPA in October 2010.

- The Performing Parties executed the AOC for completing Removal Actions at the Marina Cliffs Condominium property in December 2011.

- USEPA has reviewed and provided comments on draft Final Report; which will be revised and resubmitted subsequent to the Performing Parties completing the following remaining Removal Actions at the Marina Cliffs Condominium property:

    - Abandoning monitoring wells MW-8 through MW-10 and soil gas probes GP-1 through GP-4
    - Confirming indoor air quality within the four buildings on the Marina Cliffs Condominium property with drain tile depressurization systems exhibit concentrations below WDNR indoor air action levels
    - Executing a Post-Removal Site Control Agreement with the Marina Cliffs Condominium Corporation, which will define continuing obligations retained by the Performing Parties and/or the Marina Cliffs Condominium Corporation pursuant to NR726, and will include a Maintenance and Inspection Plan for post-closure site control management activities (including an inspection and maintenance schedule for the existing drain tile depressurization systems and the surface soils/parking areas in the two discrete areas of VOC-impacted subsurface soils, procedures for handling any VOC-impacted soils should they be excavated in the future, and an agreement providing representatives of the Performing Parties, USEPA, and WDNR necessary access to the property)
    - Completing a GIS packet and a Case Closure Request form for the Properties, and submitting both to WDNR for approval along with the appropriate fees

- Upon completion of the above activities USEPA will issue a Notification of Completion and WDNR will issue a Final Closure Letter with listing on the GIS Registry.

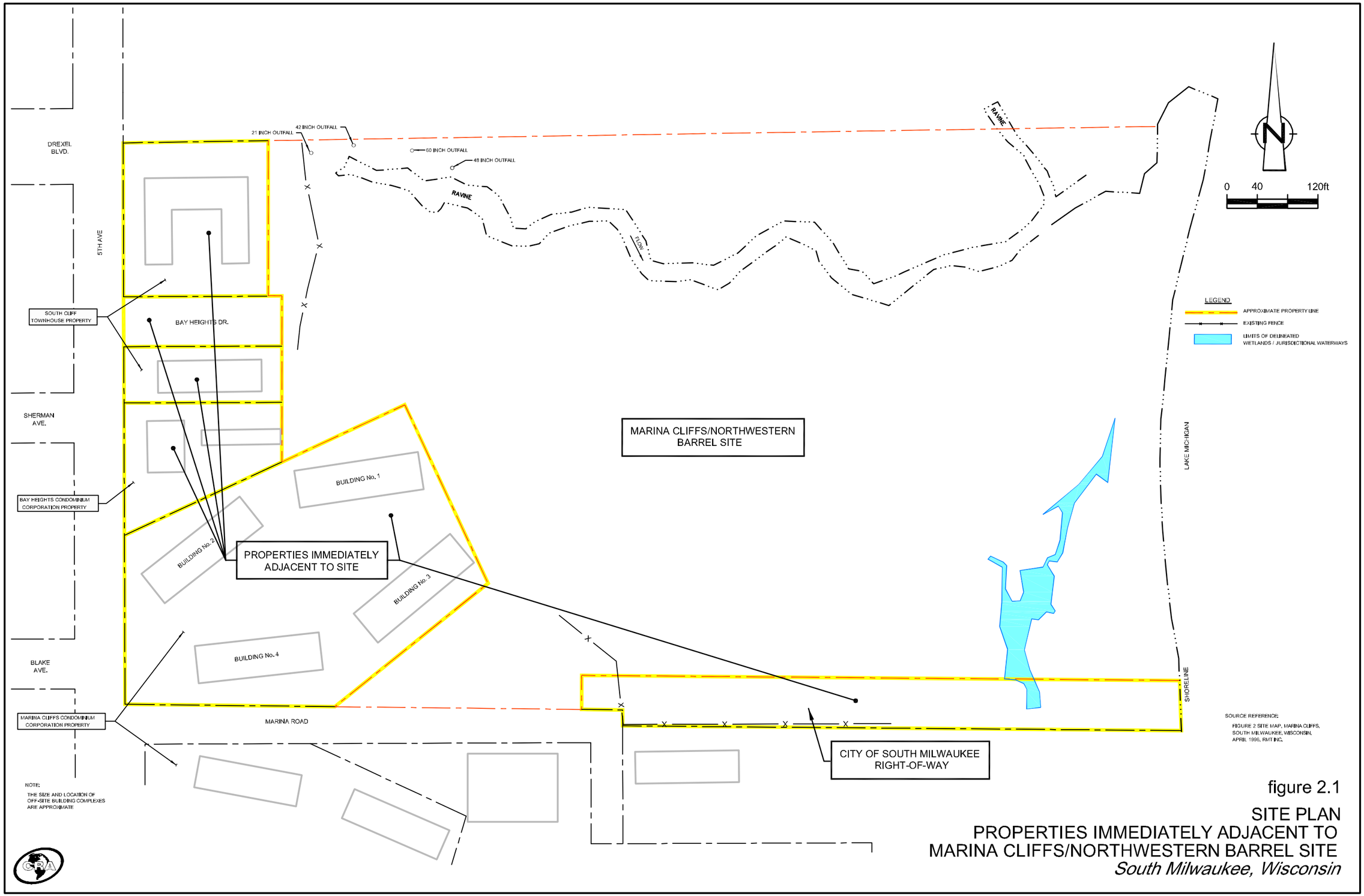

figure 2.1

SITE PLAN
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(043)GN-WA002 OCT 11/2010

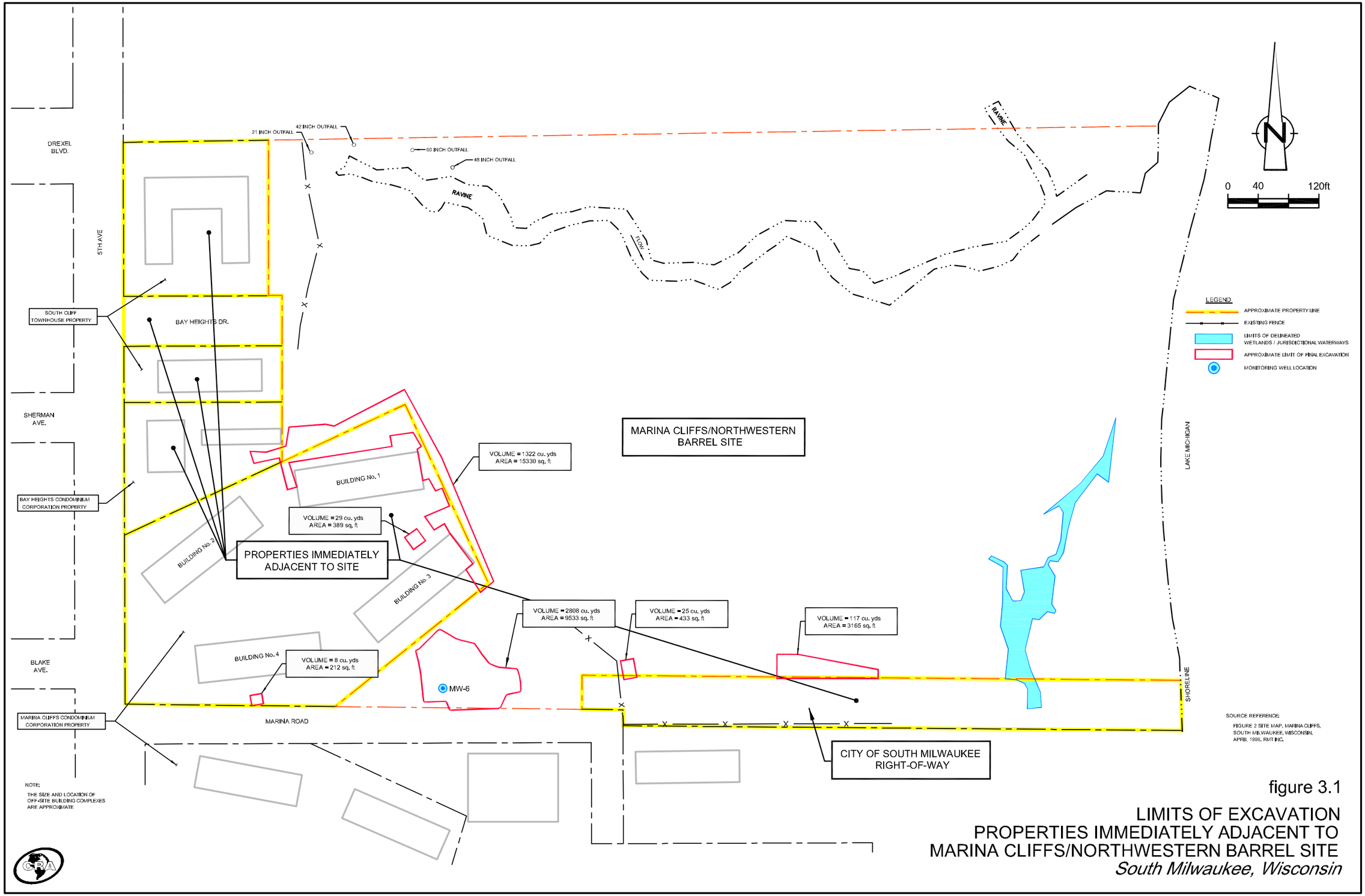

figure 3.1

LIMITS OF EXCAVATION
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(043)GN-WA003 OCT 11/2010

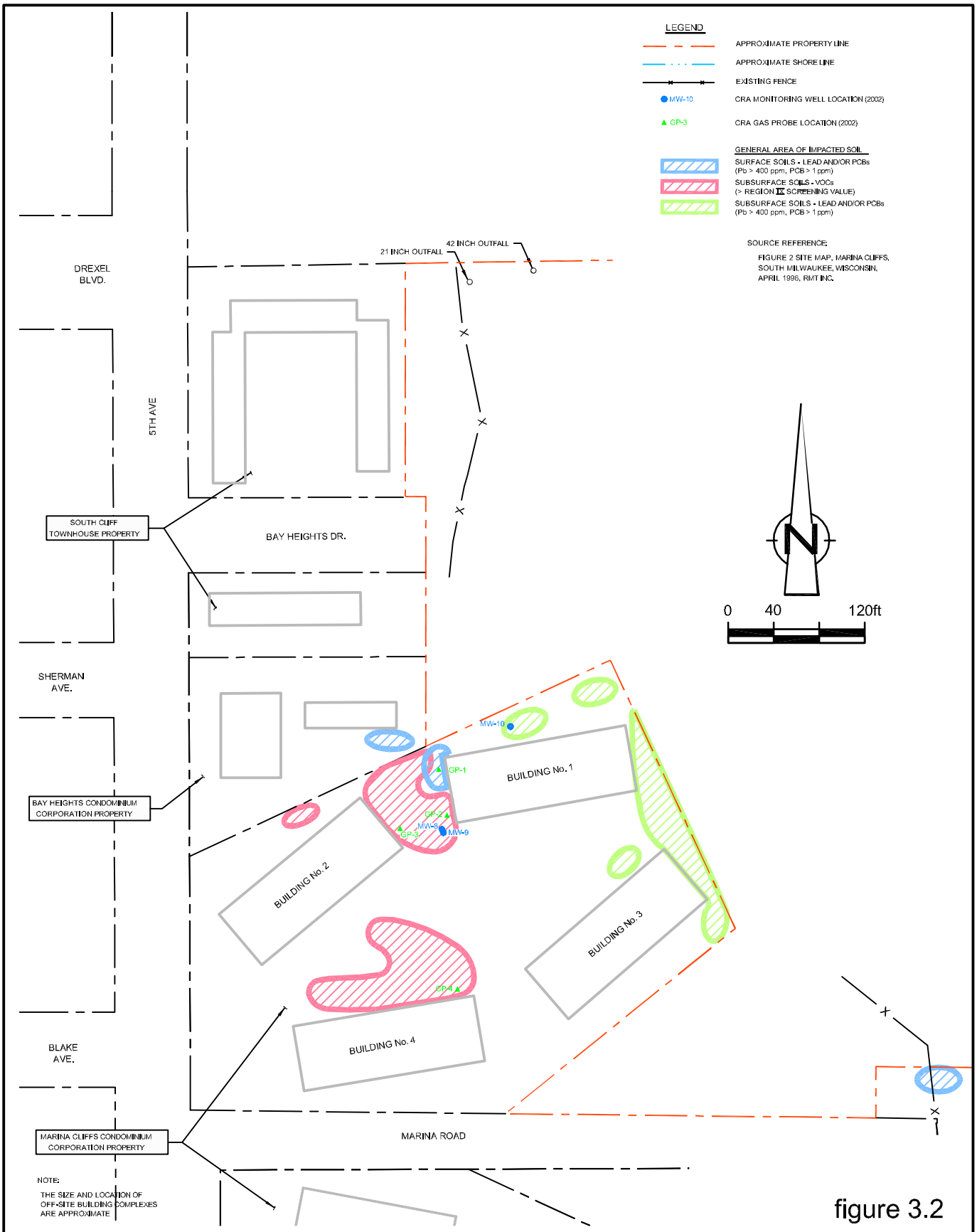

figure 3.2

INITIAL AREAS OF IMPACTED SOIL - PROPERTIES IMMEDIATELY ADJACENT TO MARINA CLIFF/NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(043)GN-WA004 OCT 11/2010

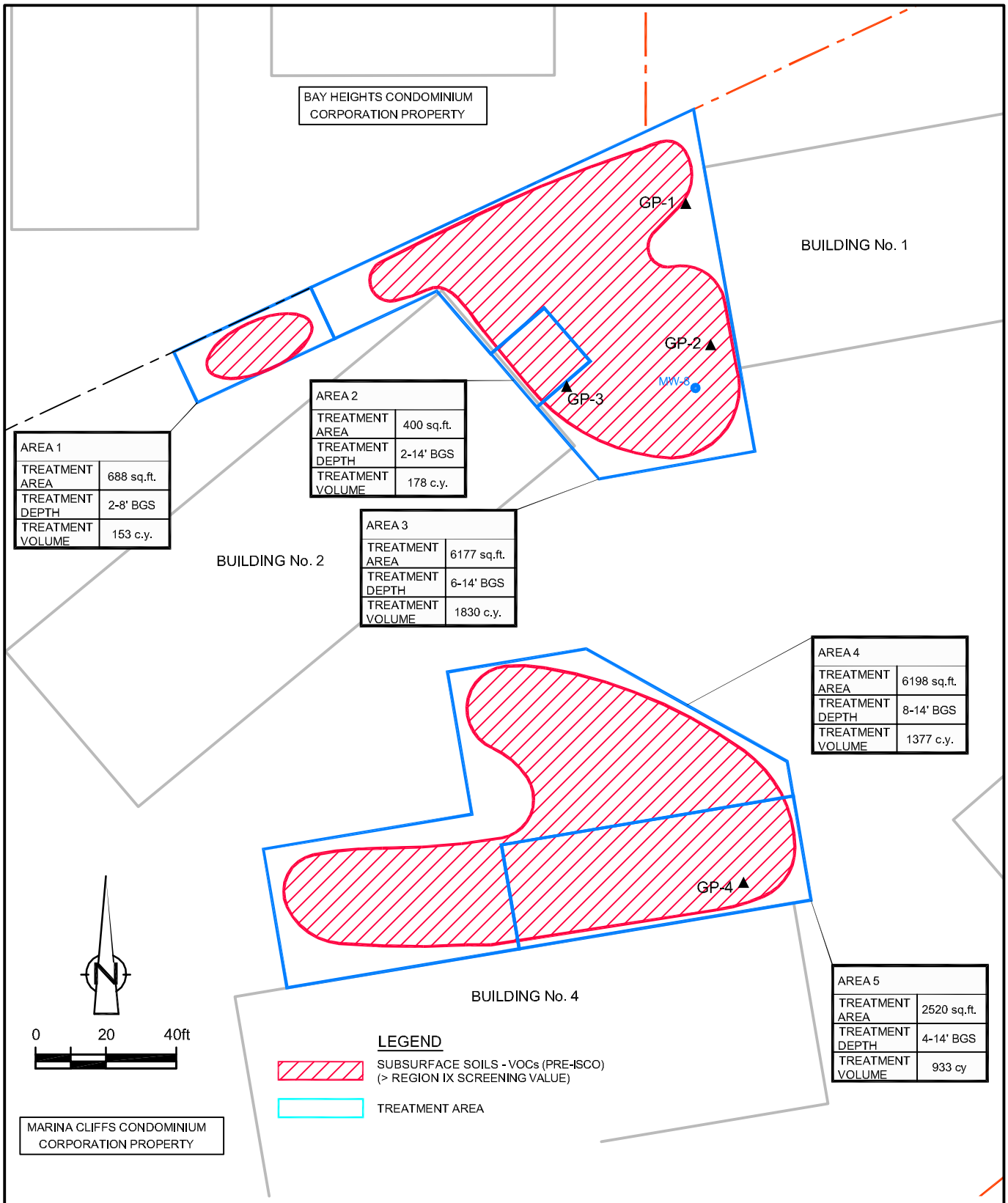

figure 3.3

ISCO PILOT TEST TREATMENT AREA
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/ NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(043)GN-WA005 OCT 11/2010

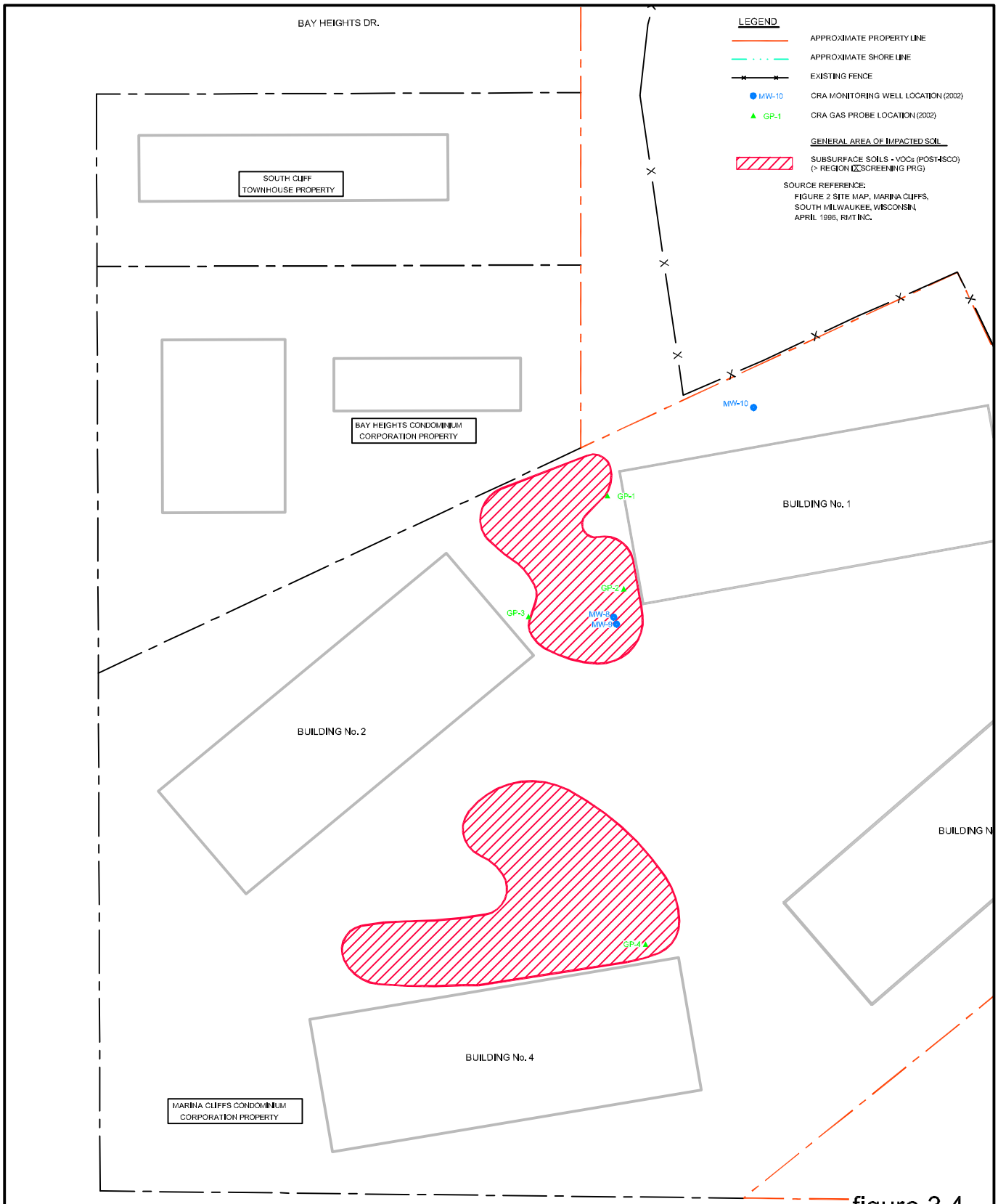

figure 3.4

POST - ISCO TEST SUBSURFACE SOILS - VOCs > REGION IX PRGs
PROPERTIES IMMEDIATELT ADJACENT TO
MARINA CLIFF/NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

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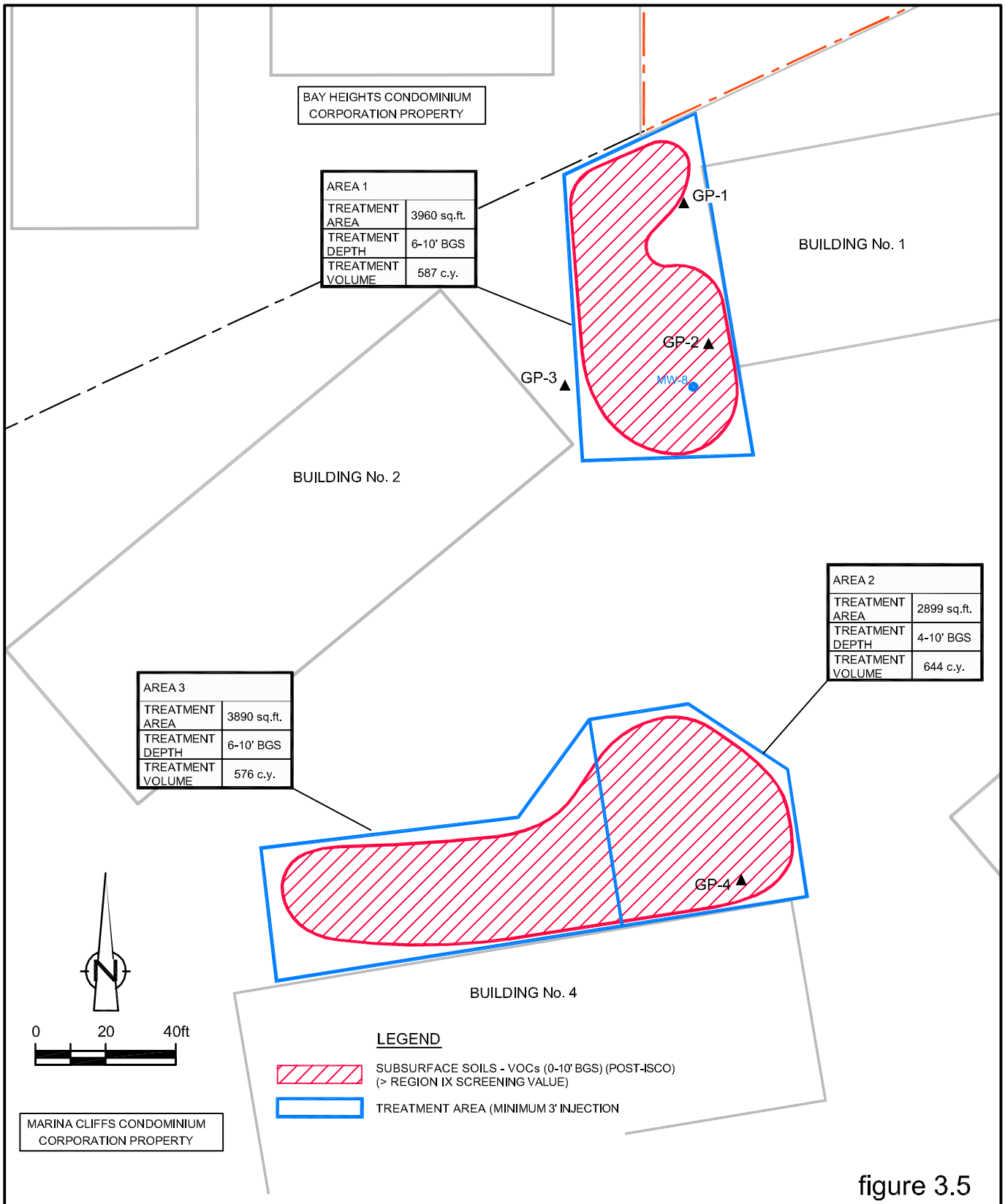

figure 3.5

ISCO REMOVAL ACTION TREATMENT AREA
SUBSURFACE SOILS (0 - 10' BGS) - VOCs > REGION IX PRGs
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/ NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(043)GN-WA007 OCT 11/2010

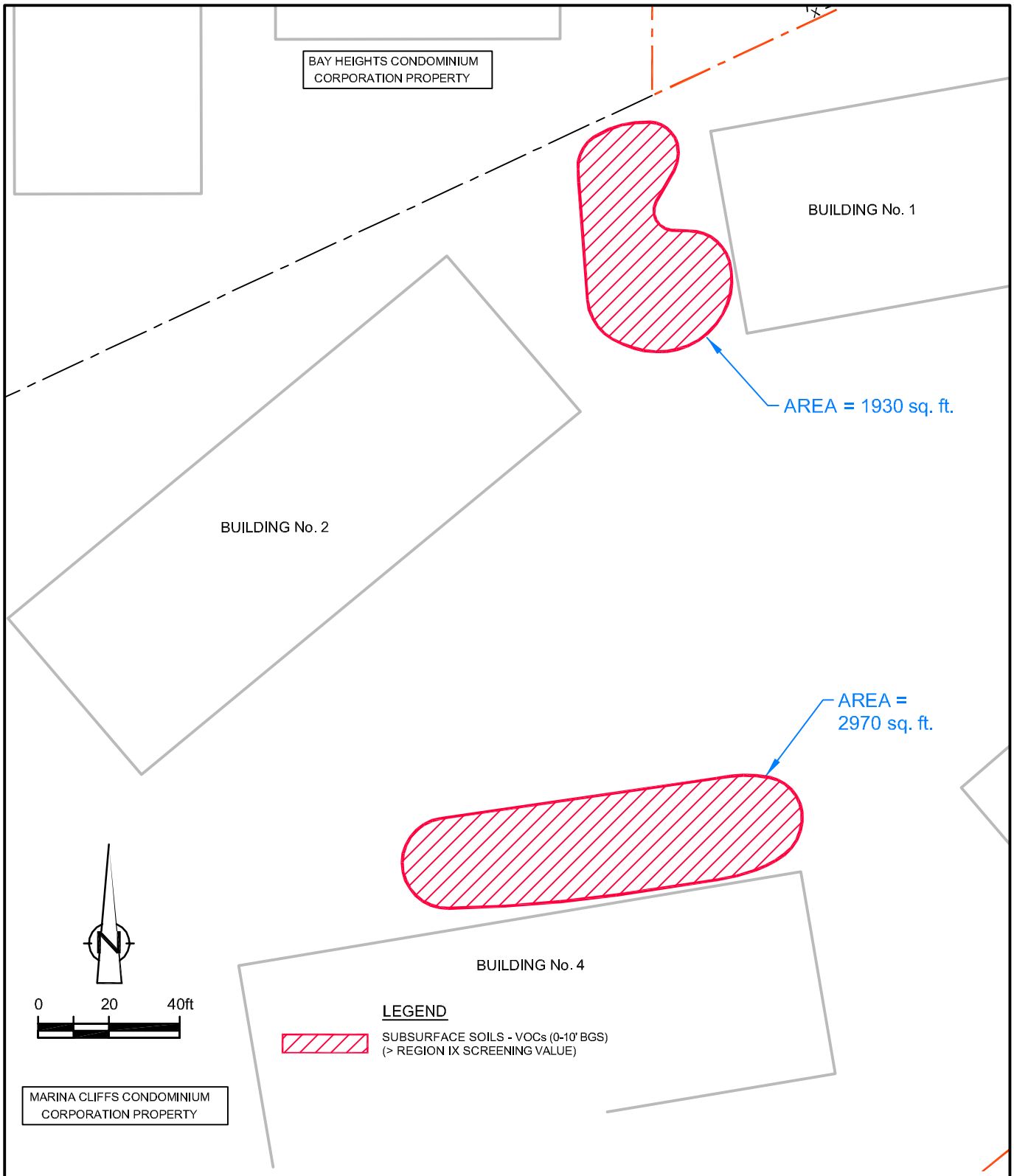

figure 3.6

POST-ISCO TREATMENT SUBSURFACE SOILS (0 - 10' BGS) - VOCs > REGION IX PRGs PROPERTIES IMMEDIATELY ADJACENT TO MARINA CLIFFS/ NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(043)GN-WA008 OCT 11/2010

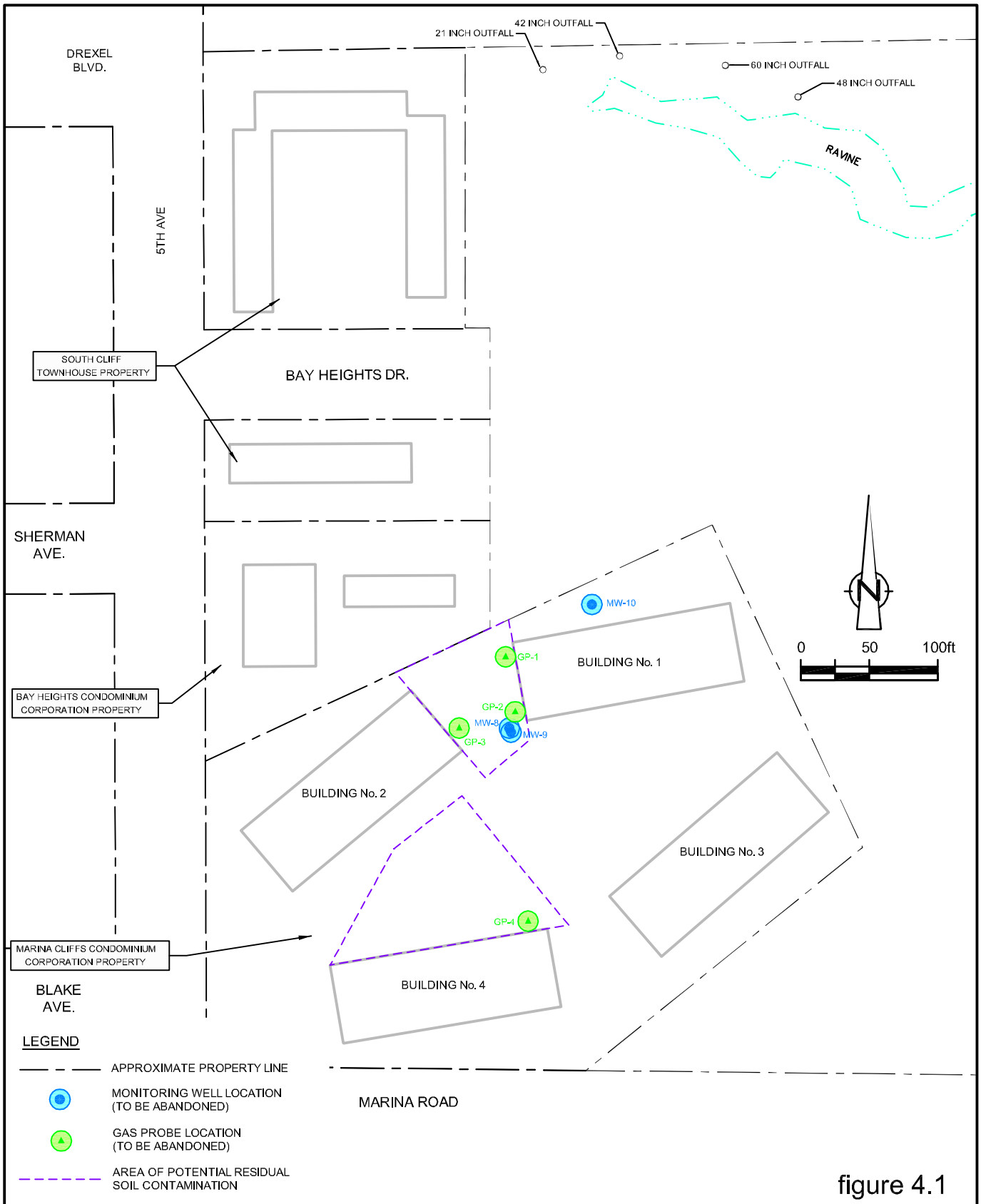

figure 4.1

AREA OF POTENTIAL RESIDUAL SOIL CONTAMINATION
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/ NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(043)GN-WA009 OCT 11/2010

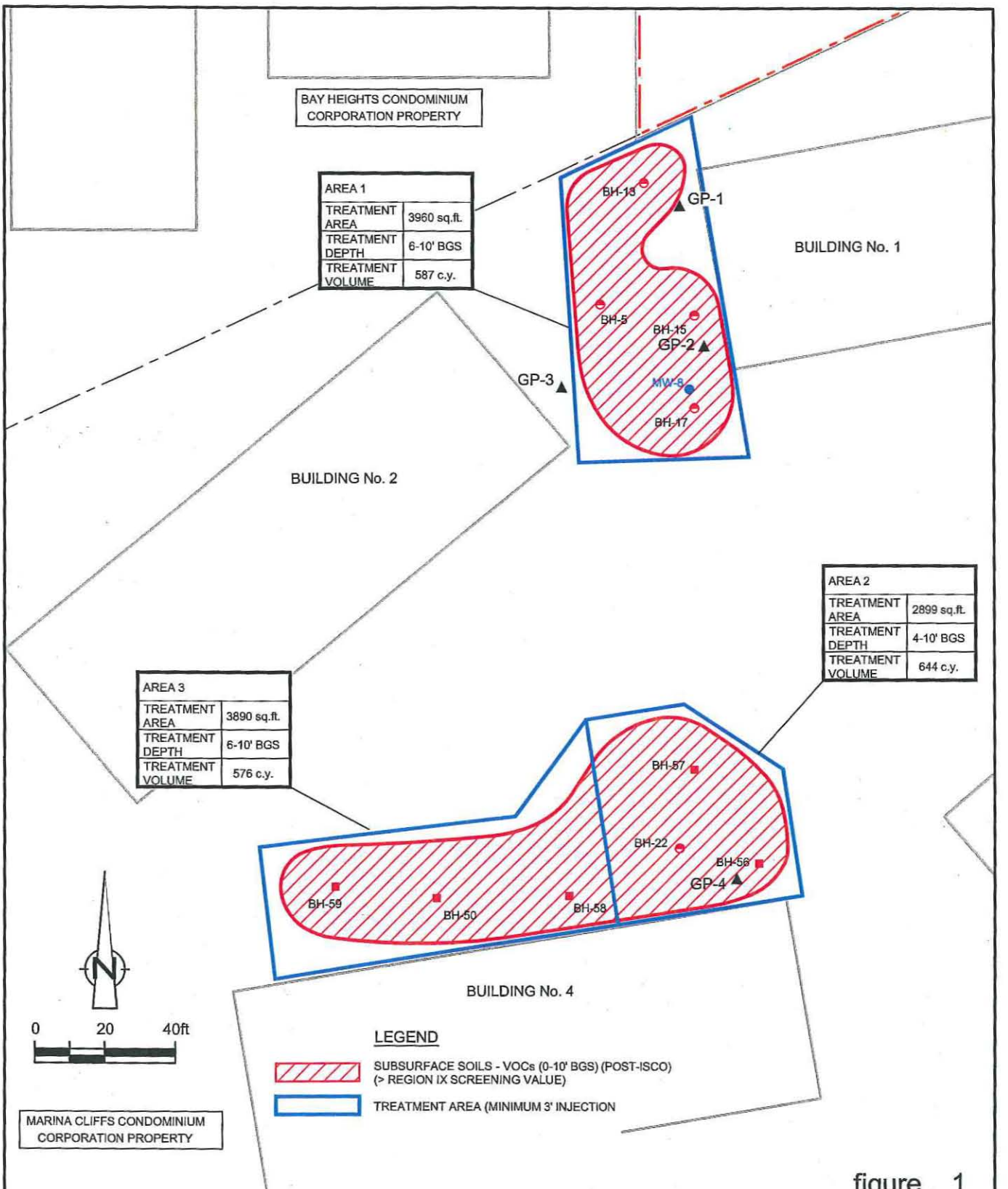

figure 1

PRE-ISCO TREATMENT
SUBSURFACE SOILS (0 - 10' BGS) - VOCs > REGION IX PRGs
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/ NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

CRA

08326-00(041)GN-WA003 SEP 03/2008

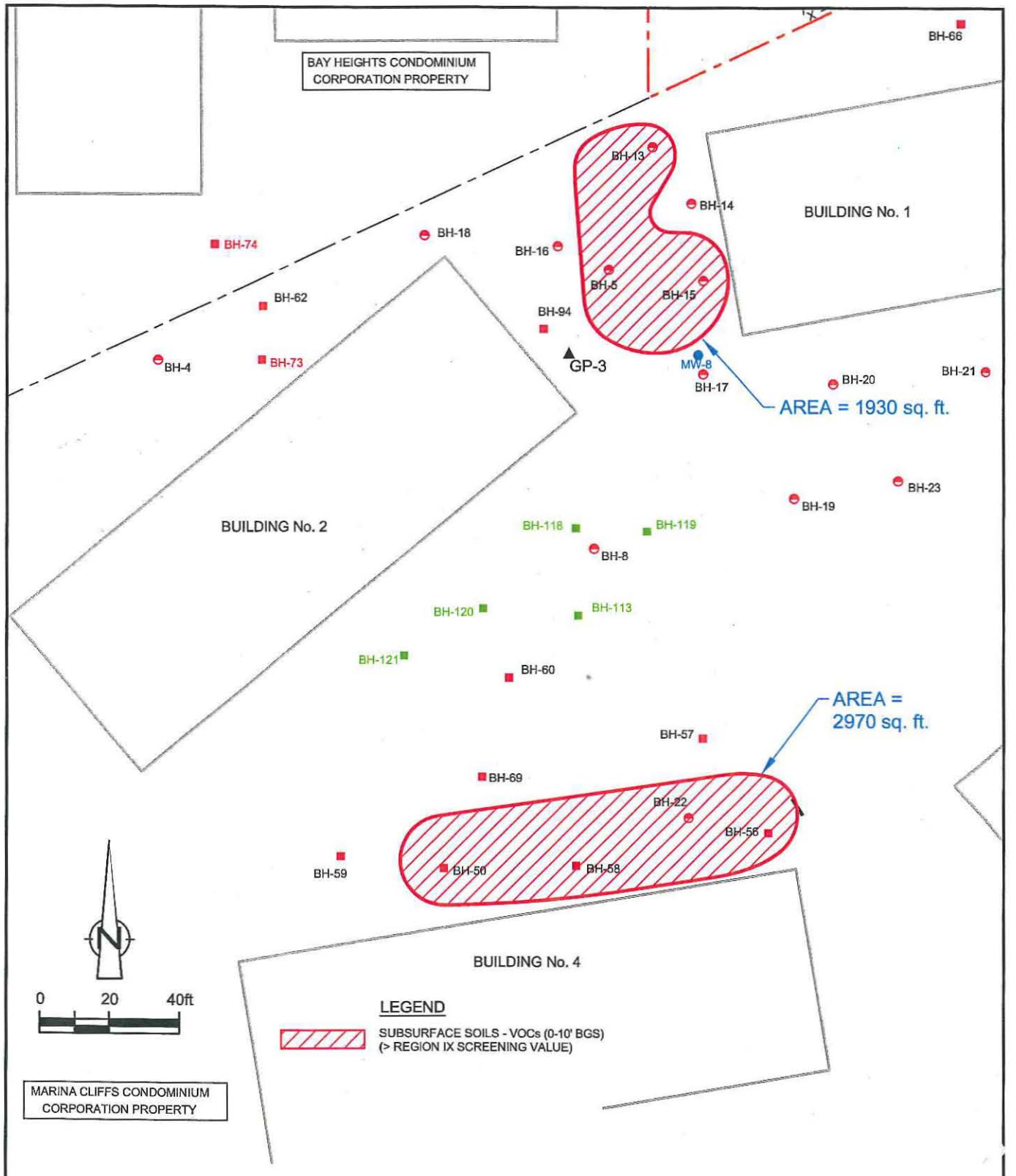

figure 2

POST-ISCO TREATMENT SUBSURFACE SOILS
(0 - 10' BGS) - VOCs > REGION IX PRGs
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/ NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

CRA

08326-00(041)GN-WA006 SEP 03/2008

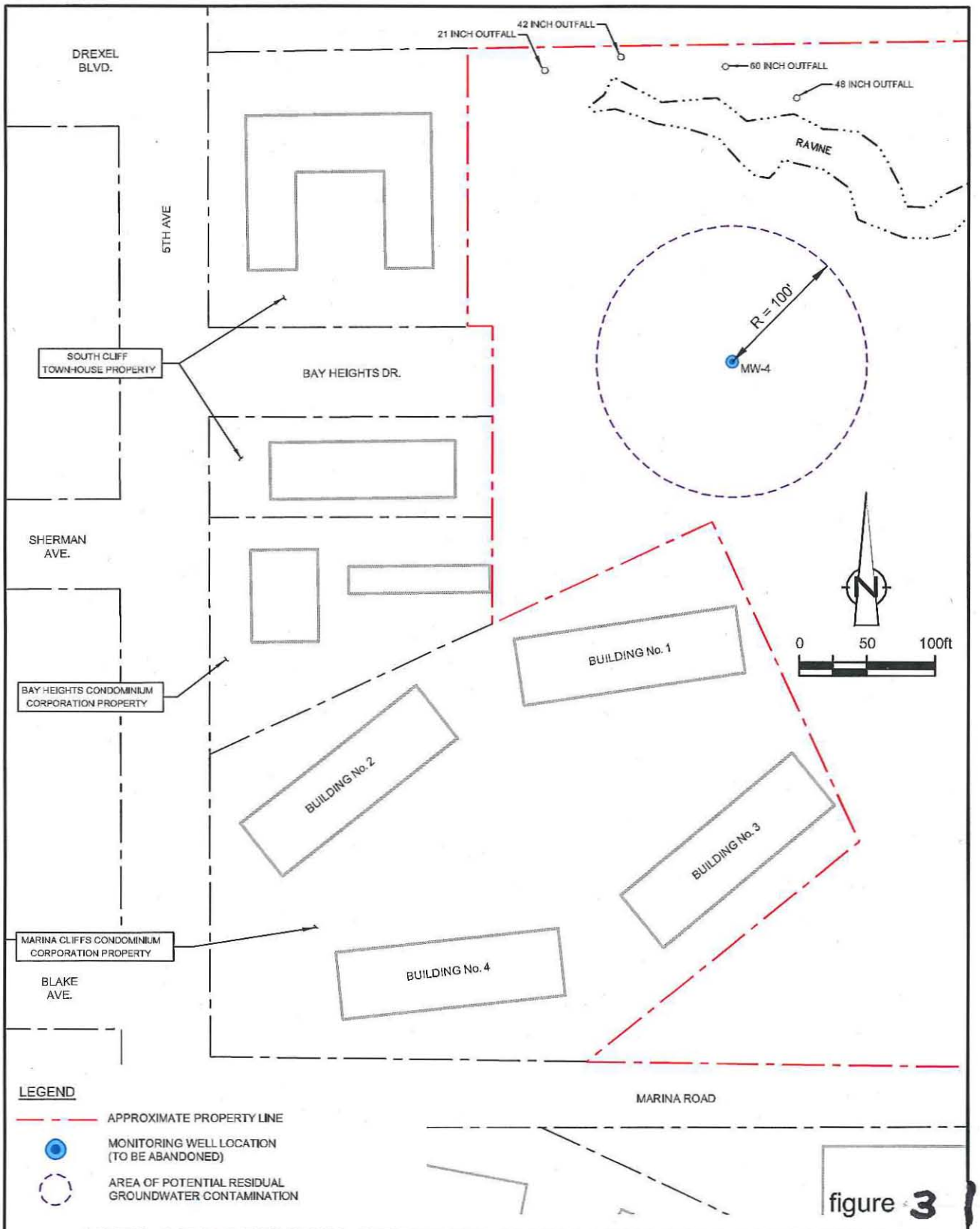

figure 3

AREA OF POTENTIAL RESIDUAL GROUNDWATER CONTAMINATION
MARINA CLIFFS/NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(042)GN-WA005 OCT 08/2010