Ground Water Monitoring Plan

Petoskey Municipal Well Field Superfund Site

CERCLIS ID# MID00613049

Petoskey, Michigan

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U.S. Environmental Protection Agency. Region 5, Chicago, IL
Superfund Division, Remedial Response Branch

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Summary

Wastes associated with the former Petoskey Manufacturing Company facility have contaminated ground water beneath the facility to the Ingalls Avenue Municipal well (the Ingalls well). These wastes are regulated under the Comprehensive Environmental Response Compensation Liability Act of 1980 (CERCLA). Under terms of a 1995 Interim Record of Decision (ROD), replacement drinking water wells were completed by late 1997 and the Ingalls well was shut down. The 1998 ROD for the site stipulates that ground-water quality is to be monitored on an ongoing basis to ensure that natural attenuation processes result in an absence of threat to human health and the environment because of ground-water contamination. This document describes the plan for long-term monitoring of ground-water quality at the site by providing information on sampling and analysis protocols, updates to the monitoring-well network, constituents, sampling frequency, quality assurance, data management, and a conceptual model for the site.

Contents

1.0 Introduction

This ground-water monitoring plan briefly describes the conceptual model for ground-water flow and contaminant migration at the site, the status of the current monitoring well network, needed improvements to the network, well locations to be sampled, sampling frequency for the wells, sampling and analysis protocols, quality assurance, and data management. Descriptions of current and historical site conditions, remedial actions, water quality, and hydrogeology of the site are included in the decision documents for the site and are partly summarized in this document. The proposed ground-water monitoring network will provide the data necessary to monitor ground water elevations as well as the future nature and extent of contamination. The monitoring effort will allow an evaluation of the ongoing threat the site poses to human health and the environment and the progress of aquifer remediation due to the selected remedy of monitored natural attenuation.

Waste disposal at the former Petoskey Manufacturing Company facility (established in 1964) have contaminated soils and underlying ground water in the vicinity of the facility, including water pumped from the Ingalls Avenue municipal well (Ingalls well)(figure 1). These wastes are regulated under the Comprehensive Environmental Response Compensation Liability Act of 1980 (CERCLA, 1980). Soils at the site contained volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and inorganic compounds. Ground water in the vicinity of the site has elevated concentrations of VOCs, primarily TCE, as well as inorganic contaminants, and low levels of SVOCs. About 130 cubic yards of contaminated soils were excavated from the site in 1982. The excavated area was then backfilled and capped with a polymembrane liner. The location of the former Petoskey Manufacturing Company facility is currently the site of condominium residences.

2.0 Nature and Extent of Contamination and Conceptual Model of Hydrogeology

The waste materials contaminated soil at the facility with TCE (maximum concentration 1,300 ppb) and PCE (150 ppb). SVOCs in the form of the polycyclic aromatic hydrocarbons benzo(a)anthracene (maximum concentration 23 ppm), benzo(a)pyrene (18 ppm), benzo(b)flouranthene (31 ppm), flouranthene (50 ppm), acenapthene (6.6 ppm), carbazole (7.8 ppm), dibenzo(a,h)anthracene (7.9 ppm), and phenanthrene (46 ppm) also were detected in on-site soils. Inorganic contamination in the soils was primarily in the form of zinc (maximum concentration 19,700 ppm), mercury (7.3 ppb), and chromium (9.5 ppm)(EC&S, 2003). The extent of soil contamination was restricted to the area of the facility. Most of the contaminated soils were removed in 1982.

The geologic deposits of interest beneath the site consist of the unconsolidated deposits and underlying shallow bedrock (Tetra Tech, 1998; MDEQ, 2002; EC&S, 2003; EC&S, 2005). The unconsolidated deposits are comprised of 5 to 45 ft of sand and gravel with varying amounts of silt and clay. The shallow bedrock is comprised of highly weathered limestone. The depth to water beneath the area is from 8 to 19 ft below ground surface, and the unconsolidated and shallow bedrock deposits are considered to comprise a single water-table aquifer. This aquifer was utilized by the Ingalls well, which has a depth of 15 ft. Ground-water flow in the aquifer is typically toward Lake Michigan and the municipal well when it operated. The frequent short-term fluctuations in lake stage induce short term changes and reversals in ground-water flow direction in the aquifer throughout the area of investigation (MDEQ 2005). Long-term fluctuations in lake stage also may induce changes in ground-water flow direction. As a result, ground-water flow directions in the aquifer are highly variable.

TCE was the most commonly detected contaminant in ground water (table 1), with a plume being present from the site to the Ingalls well, and perhaps beyond to Lake Michigan. The location of this plume is thought to have been influenced by historical pumping from the well (the well has not been pumped since 1997). Vinyl chloride also was detected in monitoring wells located near the source area. These compounds appear to be derived from site wastes. The SVOC bis(2-ethylhexyl)phthalate also has been detected in samples from ground water in the area, however, this compound is a common lab contaminant and its actual presence in site ground water is uncertain. The pesticide 4,4-DDT has been detected in some samples located away from the site but not near the source area. This compound is not thought to be site related. In addition to organic compounds, inorganic compounds such as zinc, and perhaps iron and manganese, have been detected in ground water at and near the site. Vertical aquifer profiling conducted at select well locations in 1988 showed VOC contamination was restricted to the upper about 30 ft of the aquifer near the source area at well PS-104, but that the depth of the center of the VOC plume increases to about 75 ft at well PS-105. Vertical aquifer profiling at well PW-106 indicated VOCs were absent from the aquifer in this area. Sampling performed in November 2005 indicates the VOC plume currently extends from the site to the area of the Ingalls well, which is consistent with its historical location. However, several monitoring wells were either damaged, abandoned, missing, or improperly secured at the time of this sampling and the monitoring network is in need of updating (table 1) (figs. 2, 3, 4).

3.0 Groundwater Monitoring Program

This section describes the monitoring program for the site. The program is designed to monitor the nature and extent of contamination in ground water in the vicinity of the site through time until such time as source control and natural attenuation processes have remediated the plume. It includes well networks, constituent lists, and sampling frequency. Because a number of the monitoring wells have been destroyed, cannot be found, are screened above the current water table (are dry), may be destroyed by future construction activities, or had their integrity compromised by recent construction activities, the plan also describes the current status of the well network and the steps that will be taken to restore the network. Restoration of the well network will require replacing six abandoned or compromised wells, rehabilitating as many as four compromised wells, and abandoning several damaged wells (figs. 2-5; tables 1 and 2).

3.1 Monitoring Well Network

The existing monitoring network is shown in figure 1. Information on the well depth, historical water-quality data, and the current status of the well is presented in table 1. All of the wells monitor the water table aquifer, but the part of the aquifer monitored (water table, mid-depth, maximum depth) varies. It should be noted that the depth of most of these wells was pre-selected, rather than being based on monitoring data such as vertical aquifer profiles. As a consequence, it is unknown if the majority of the wells monitor representative parts of the plume. In addition, long term (multi year) fluctuations in the stage of Lake Michigan have the potential to alter flow directions and plume migration, so that the location of the plume as defined at any point in time will not necessarily be representative of future conditions. It is important, therefore, that the monitoring network be flexible enough to monitor conditions in this dynamic aquifer.

Rationale for selection of the monitoring well network is provided in table 2. The network of potential monitoring wells for the Petoskey site includes more than 20 wells. While many wells are currently intact and are available to be monitored the integrity of some wells has been compromised and they will need to be replaced before they can be monitored. As a consequence, monitoring will occur in two phases. Phase I monitoring began in November 2005 and involves ongoing sampling from select available monitoring wells. Phase II monitoring will occur from the currently available wells and the replacement wells and will begin when the replacement wells are available.

Phase I wells are as follows (fig. 6): well PS-13 will monitor upgradient water quality and determine if short-term reversals in flow direction ever result in a reversal in plume movement. Wells PS-104 and PS-4 will monitor water quality in the aquifer near the source of contamination. Wells PS-CS, PS-CD and PS-11 will be sampled to monitor conditions in the heart of the plume away from the source area. Wells PS-BS, PS-106, COP-1, and COP-5 will be sampled to monitor the periphery of the plume to ensure it does not migrate substantially in response to long-term fluctuations in the stage of Lake Michigan or other factors. Well PS-11 may have to be replaced if a proposed underground storage reservoir is installed at the location of the well. Wells COP-5, PS-CS, and PS-CD have been compromised by construction activities and will be rehabilitated. However, these wells have sufficient integrity, and are located in sufficiently sensitive parts of the plume, that they will be sampled during the Phase I effort until replacement wells are available. Well rehabilitation will be performed by the City of Petoskey or its representatives as soon as possible.

Phase II wells are as follows (fig. 7): in addition to the Phase I wells, replacement wells will be drilled for wells MW-205S/D near (within 15 ft) their current locations and at or near their current depths. Well COP-5 will be replaced at a location within 15 ft of its current location if it cannot be rehabilitated. Well COP-5 will be deepened to 15 ft if re-drilled (table 2). Wells PS-AS/D and PS-105S/D will be abandoned and replaced at more suitable locations for plume monitoring. The proposed replacement wells are MW-401S and 401D, designed to monitor water quality near the southwestern periphery of the plume at about 20 and 45 feet, respectively; and MW-402S and 402D, designed to monitor the northeastern periphery of the plume at a depths of about 20 and 45 feet. Well replacement will be performed by the City of Petoskey or its representatives as soon as possible.

Efforts will be made to locate well PW-201D. Once found, a determination will be made as to whether or not this well can be rehabilitated. If this well can be rehabilitated it will be included in the Phase II sampling. If not, the well will be abandoned.

All wells that are to be replaced will be properly abandoned first. Several additional wells that have been damaged also will be properly abandoned (table 2) so as not to compromise the aquifer. A number of other wells will remain intact (table 2), but will not be monitored for water quality. If conditions change in the future, these wells will be available for use.

3.2 Constituent List and Sampling Frequency

An initial set of samples was collected in November 2005 from the available monitoring wells. These samples were analyzed for VOCs, SVOCs, metals, and field parameters (pH, dissolved oxygen, oxidation-reduction potential, temperature, specific conductance, turbidity). The November 2005 analyses, as well as historical analyses, indicate that VOCs and perhaps select metals are contaminants of concern. Samples will be collected from the existing wells listed in table 2 on a quarterly basis for a period of two years beginning with the November 2005 sampling date. This sampling will constitute Phase I of the sampling. Based on this schedule, the last quarterly sampling event will occur approximately in June of 2007. Quarterly samples will be analyzed for VOCs and metals as wells as select field parameters (specific conductance, pH, temperature, dissolved oxygen, oxidation-reduction potential, turbidity). Replacement wells listed in table 2 will be sampled on a quarterly basis with the existing wells. This will constitute the Phase II sampling. Replacement wells will be sampled initially for VOCs, SVOCs, metals, and field parameters. Unless the initial sampling indicates SVOCs and metals are present at concentrations sufficient to make them contaminants of concern, these constituents will not be analyzed for during subsequent sampling events. After the June 2007 quarterly sampling event has been performed an analysis of the sampling data will be conducted to determine the future sampling locations and sampling frequency. Subsequent water-quality data will be reviewed every five years to determine the appropriate future sampling procedures at the site (sampling frequency, sample locations, analytes, etc.) until such time as sampling is no longer deemed to be necessary.

Details of the sample collection, handling, shipping, and analysis as well as the list of constituents to be analyzed are described in the Sample and Analysis Plan (Environmental Design International, Inc., 2005a), the Work Plan (Environmental Design International, Inc., 2005b) and the Quality Assurance Project Plan (Environmental Design International, Inc., 2002). The contractor performing the sampling will receive the sample results from the lab and will submit those results to the USEPA site project manager within 30 days of their receipt from the analyzing lab.

3.3 Well Construction Details

On the basis of the field investigation conducted in November 2005, many of the monitoring wells required for the long-term monitoring effort have been destroyed, infilled with natural material, damaged, cannot be found, have been abandoned, or will require replacement or rehabilitation before they can be incorporated into the monitoring network (figs. 3, 4, 5, 7)(tables 1, 2). It is anticipated that the new monitoring wells will be installed in a manner consistent with USEPA and MDEQ guidelines.

The following items are recommended for all replacement monitoring wells:

• Wells proposed for replacement at the same location (COP-5, MW-205S/D) will be located within 15 ft of the wells they replace. If the replacement well is located in an area deemed unsafe or likely to affect its integrity (parking lots, roadways, construction areas) the well can be moved the smallest distance feasible to a better location.

• Five- or 10- foot screen lengths to monitor the water table (10-ft screen) or discrete intervals within the aquifer (5-ft screen). The depth interval of the screen has been determined on a well-by-well basis, but is typically placed so as to monitor the same hydraulic interval as the well it replaces.

• Monitoring well screens and casings should be schedule 40 stainless steel with 0.01-inch slots and a diameter of 2 inches. Well screens should be surrounded by a sand pack to a depth of about 2 ft above the top of the screen. About 2 ft of bentonite chips should be placed above the sand pack and hydrated. Grout should be emplaced above the bentonite chips to a depth of about 1.5 ft below ground surface. The hole should then be filled with concrete to a point just above land surface (or just below the top of the well pipe depending on whether or not the well is a flush mount) and the surface casing installed into the concrete.

• Above ground well surface casings should be used wherever feasible to prevent surface-water runoff from entering the wells and affecting the integrity of the samples. If there aesthetic reasons for not wanting an above ground well casing, the wells can be camouflaged. If flush mount wells must be used, the casing will be should be cemented in place and casings will be constructed to provide surface-water drainage away from the well.

• All monitoring wells will have locking caps and be locked with brass locks that can be opened with a common key (if feasible). Flush mount wells, if installed, will have water-tight caps to prevent infiltration of water into the aquifer via the well. Wells will be clearly numbered on the inside of the protective casing to facilitate identification.

• All monitoring wells that are to be abandoned will be abandoned in accordance with the appropriate State of Michigan regulations.

• The volume of water used during well drilling should be recorded and three times that volume should be purged during well development.

• Replacement wells or wells that have been converted from above ground to flush mount will be surveyed for location (latitude and longitude) and altitude of land surface at well and top of well riser pipe by the City of Petoskey or its representatives. Surveying will be done to USEPA standards of accuracy, typically within 1 meter for latitude and longitude, 0.10 feet for land surface altitude, and 0.01 ft for altitude of top of riser pipe.

3.4 Maintenance Considerations

Construction practices are intended to limit problems with well maintenance. However, because the performance of the monitoring network has been hampered by maintenance factors not entirely related to construction, an ongoing effort to maintain these wells is necessary. A separate document may be prepared to address monitoring well maintenance considerations.

• The integrity of every monitoring well will be checked during every sampling event. This includes, but is not limited to, determining that—wells are locked and properly covered, caps on flush mount wells remain capable of preventing the movement of water into the aquifer, well screens have not been blocked off from the aquifer due to sedimentation or other phenomena, well covers and casings have not been damaged by frost heave or collision with a vehicle.

• All feasible methods (map search, metal detectors, etc.) will be used to locate wells that cannot be found (table 1) so that they may be properly rehabilitated or abandoned.

• The City of Petoskey will be made aware of the location and existence of every monitoring well. If the City plans to do construction in the area of a monitoring well, they will notify the USEPA of there intention at least 3 months in advance so the EPA can determine if a well should be abandoned by the City to avoid potential aquifer contamination through inadvertent damage to the well during construction. Monitoring wells abandoned, buried, or damaged by the city or its representatives will be replaced as soon as possible at city expense.

4.0 Quality Assurance and Quality Control

The quality assurance/quality control (QAQC) program is designed to assess and enhance the reliability and validity of groundwater data. The QAQC program is outlined in the Quality Assurance Project Plan (QAPP) that applies to this sampling effort (Environmental Design International, Inc., 2002). The primary quantitative measures or parameters used to assess data quality are accuracy, precision, completeness, and the method detection limit. Qualitative measures include representativeness and comparability. Goals for data representativeness for groundwater monitoring projects are addressed qualitatively by the specification of well locations, well construction, sampling frequency, and sampling and analysis techniques in the QAPP. Comparability is the confidence with which one data set can be compared to another. The quality control parameters are evaluated through laboratory checks (e.g. matrix spikes, laboratory blanks), replicate sampling and analysis, analysis of blind standards and blanks. Acceptance criteria have been established for each of these parameters in the project QAPP, based on guidance from the U.S. Environmental Protection Agency (EPA 1986a; 1986b). When a parameter is outside the criteria, corrective actions are taken to prevent a future occurrence and affected data are flagged in the database.

5.0 Data Management

Results of the laboratory analysis of the samples are to be reported electronically by the laboratory to the sampling contractor. Field-measured parameters are to be recorded on field data sheets then entered manually onto a spreadsheet by the sampling contractor. Data reports detailing the sampling effort (date, wells sampled, problems encountered, field notes, etc.) and the results of the sample analysis will be submitted by the sampling contractor in either paper or electronic format to USEPA. USEPA will store the data reports with the site record.

Verification of analytical data provided by the subcontracted laboratory will be performed in accordance with procedures documented in the QAPP. This procedure includes checks for: 1) completeness of hardcopy deliverable, 2) condition of samples upon receipt by the laboratory, 3) problems that arose during the analysis of the samples, and 4) correct reporting of results. The procedure also describes the actions to be taken associated with incomplete or deficient data.

Quality control data are evaluated against criteria listed in the project QAPP and data flags are assigned when the data do not meet these criteria. The data undergo a validation/verification process according to a documented procedure. Under this procedure, data are screened by scientists familiar with the site hydrogeology, compared to historical trends or spatial patterns, and flagged if they are not representative. Other checks on data may include comparison of general

Environmental Design International, Inc., January 30, 2002, STAT Contract-Wide Quality Assurance Project Plan, U.S. EPA Contract No. 68-S5-01-02.

U.S. EPA Region 5, June 14, 1995, Interim ROD for the Petoskey Municipal Well Field Superfund Site, Petoskey, MI, Ingalls Well Replacement.

U.S. EPA Region 5, September 30, 1998, Final ROD for the Petoskey Municipal Well Field Superfund Site, Petoskey, MI.

U.S. EPA Region 5, March 16, 2005, Five-Year Review for the Petoskey Municipal Well Field Superfund Site, Petoskey, MI.

EPA. 1986a. Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, SW-846, Third Edition., Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

EPA. 1986b. RCRA Groundwater Monitoring Technical Enforcement Guidance Document, U.S. Environmental Protection Agency, Washington, D.C.

RCRA . Resource Conservation and Recovery Act. 1976. Public Law 94-580, as amended, 90 Stat. 2795, 42 USC 6901 et seq.

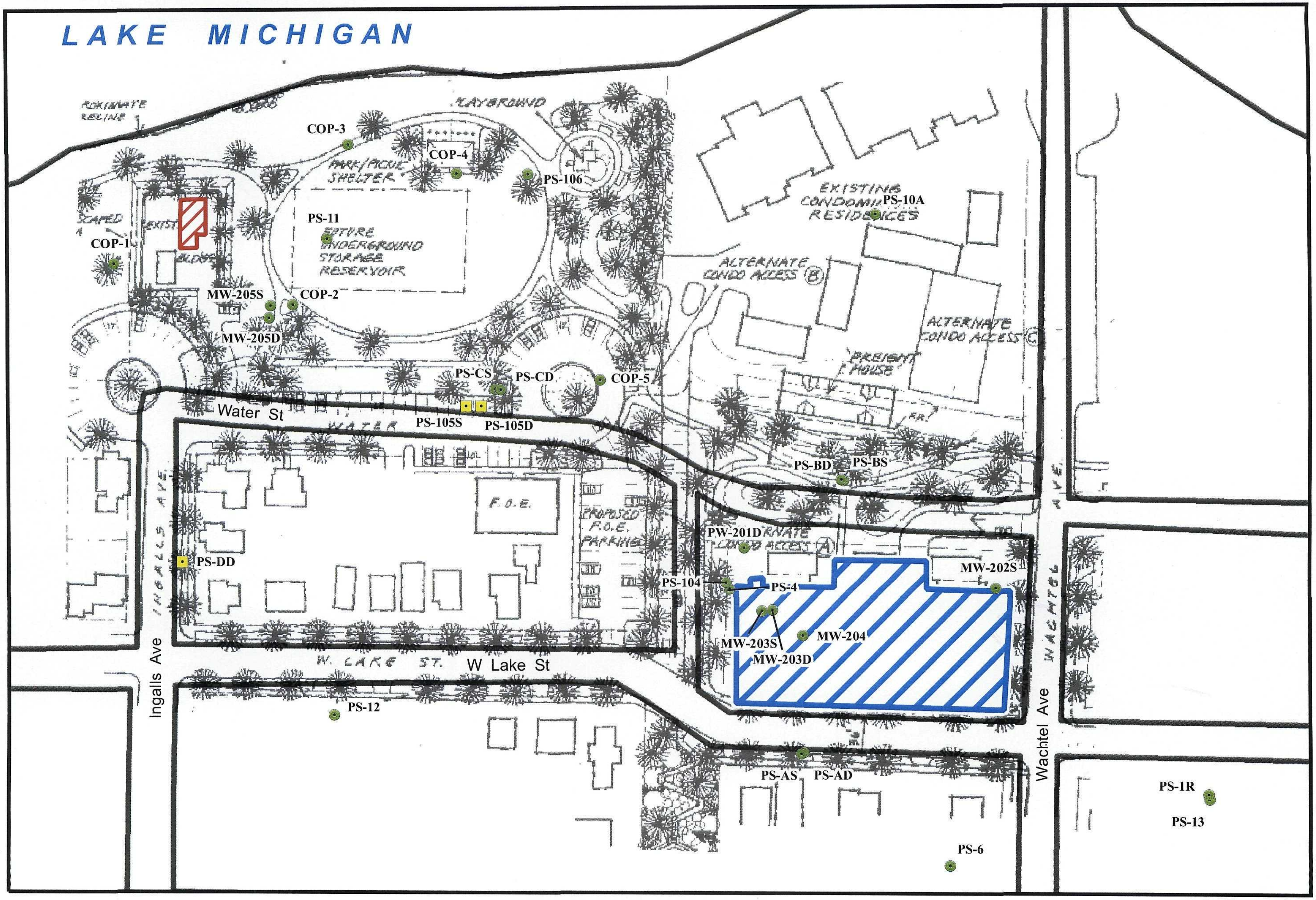

FIGURE 1. ALL MONITORING WELLS DRILLED TO DATE (n = 30)

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

- MDEQ GPS WELL LOCATIONS
- VISUALLY INSPECTED WELL LOCATIONS
- INGALLS AVE WELL
- FORMER PETOSKEY MANUFACTURING COMPANY

0 50 100 150 Feet

N

FIELDS

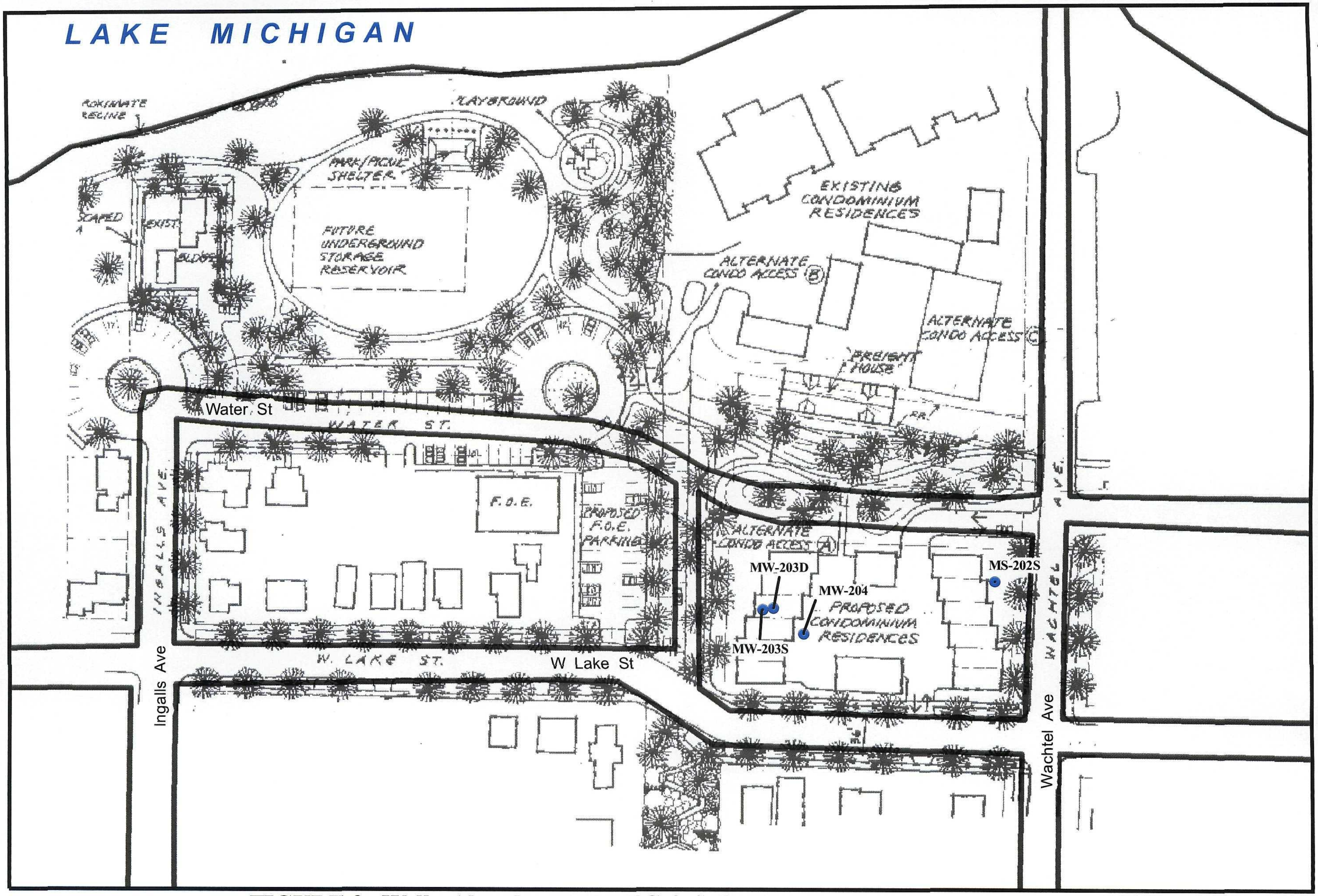

FIGURE 2. Wells Abandoned By EC & S During Condominium Construction

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

● MDEQ GPS WELL LOCATIONS

0 50 100 150 Feet

N

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FIELDS

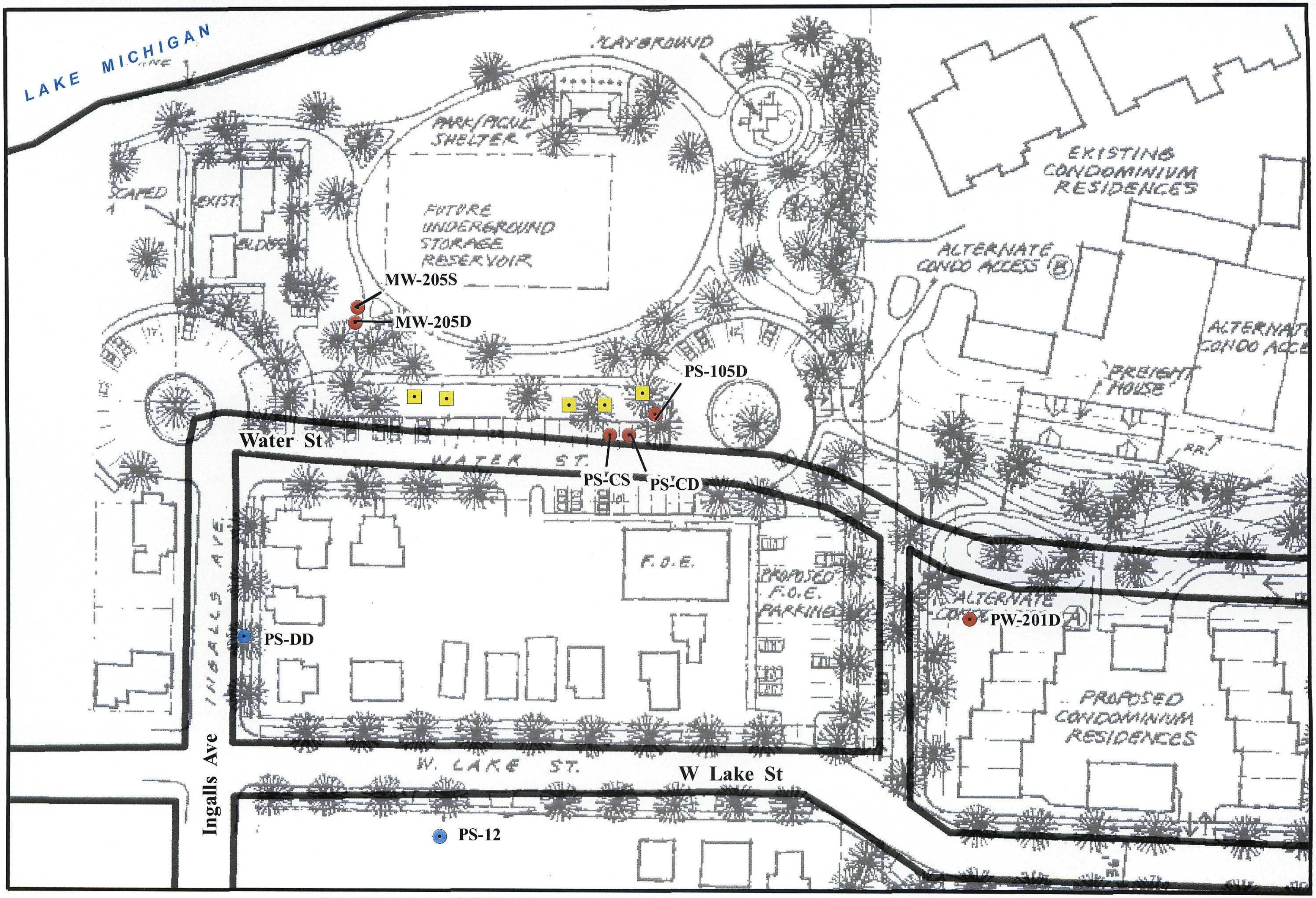

FIGURE 3. WELLS DAMAGED BY PARK CONSTRUCTION

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

- REPAIR / REPLACE IN BETTER LOCATION (blue)
- REPAIR / REPLACE IN SAME LOCATION (red)
- PROPOSED REPLACEMENT LOCATIONS (yellow)

0 50 100 150 Feet

N

FIELDS

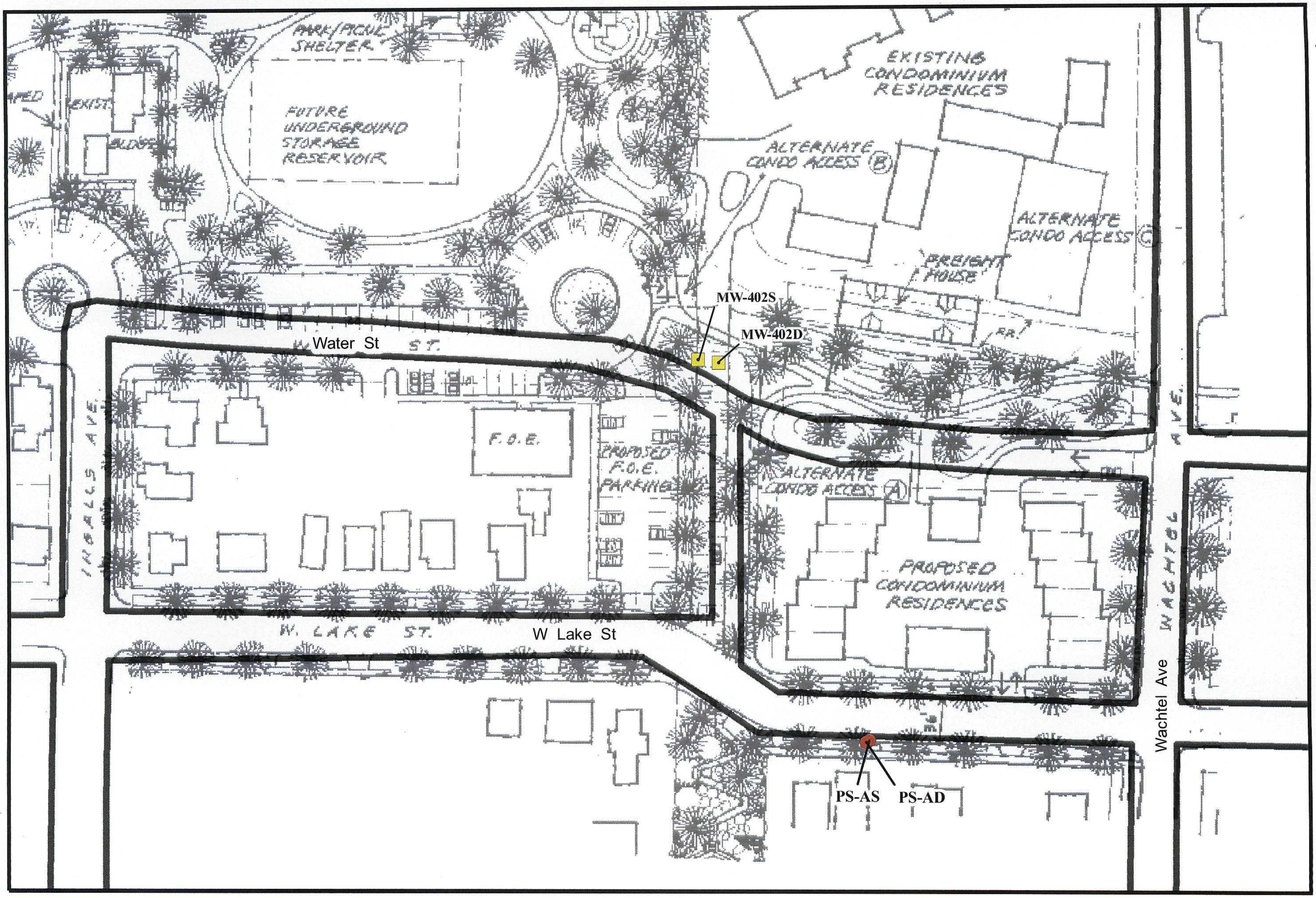

FIGURE 4. Wells Intentionally Abandoned During Park Construction

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

- ABANDONED WELLS
- PROPOSED REPLACEMENT LOCATIONS

0 50 100 150 Feet

N

FIELDS

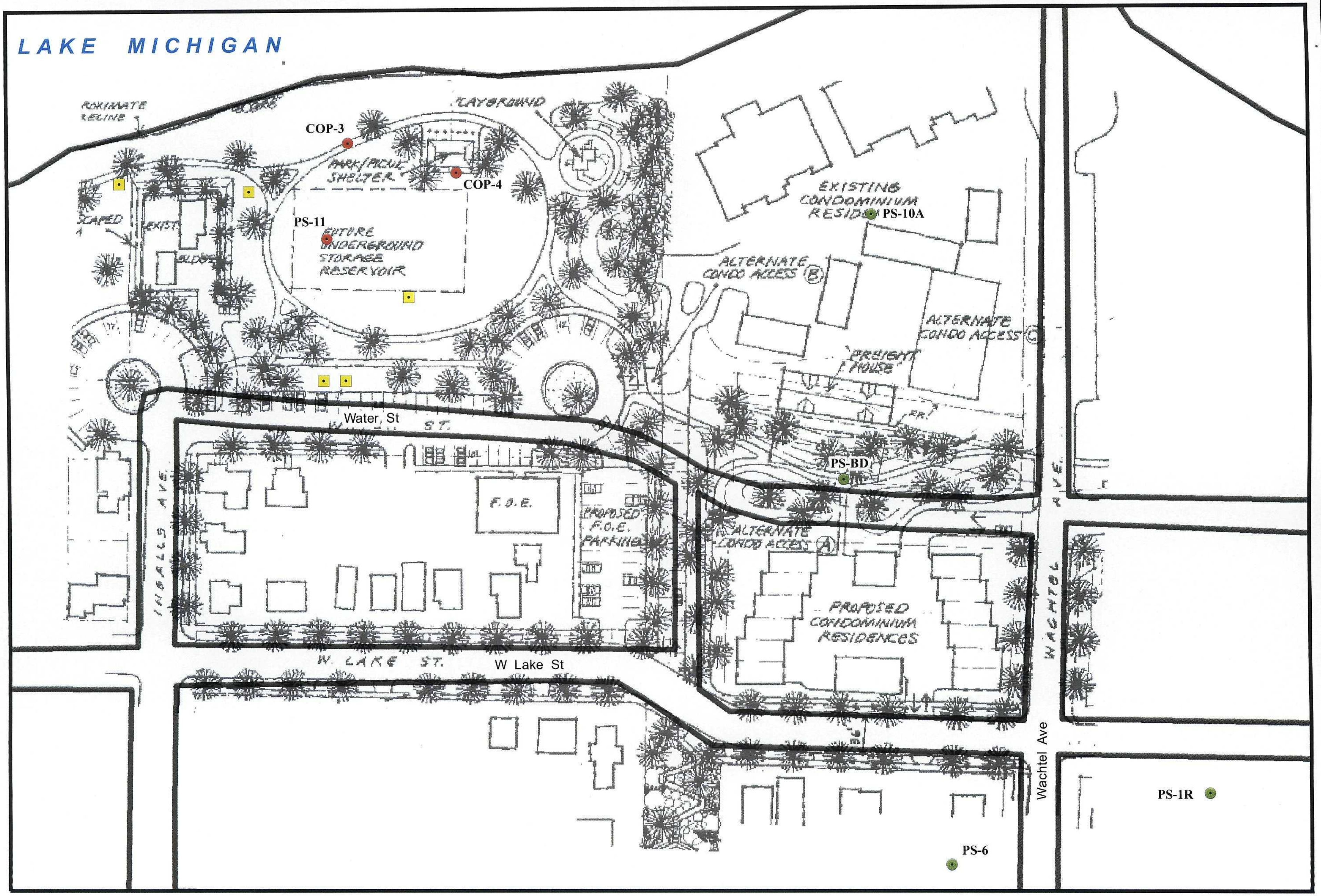

FIGURE 5. UNDAMAGED WELLS CONSIDERED FOR ABANDONMENT

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

- KEEP OR REPLACE ELSEWHERE
- OK TO ABANDON
- PROPOSED REPLACEMENT LOCATIONS

0 50 100 150 Feet

N

FIELDS

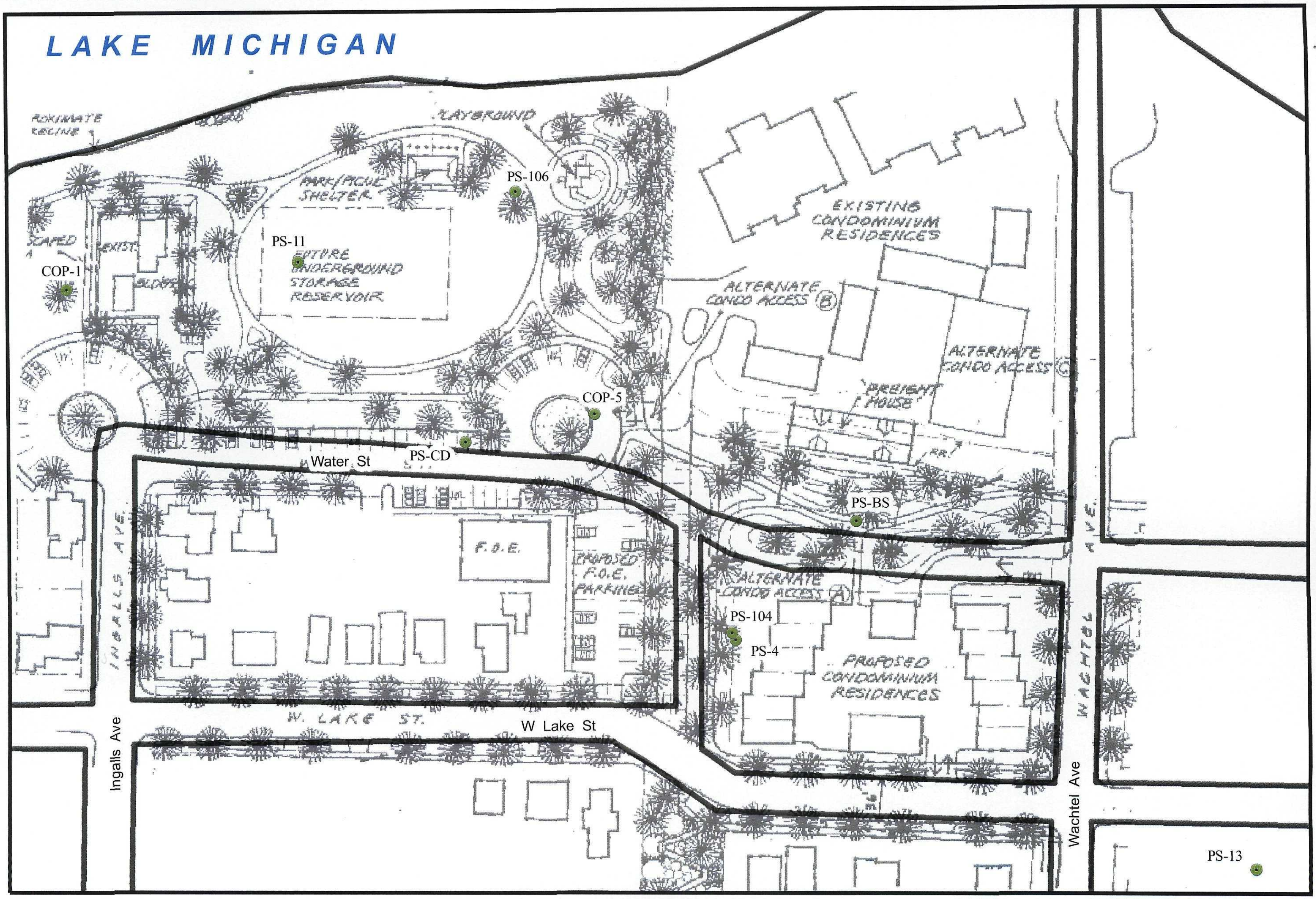

FIGURE 6. INTERIM MONITORING WELL NETWORK (PHASE I)

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

● EXISTING WELLS PROPOSED FOR QUARTERLY MONITORING

0 50 100 150 Feet

N

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FIELDS

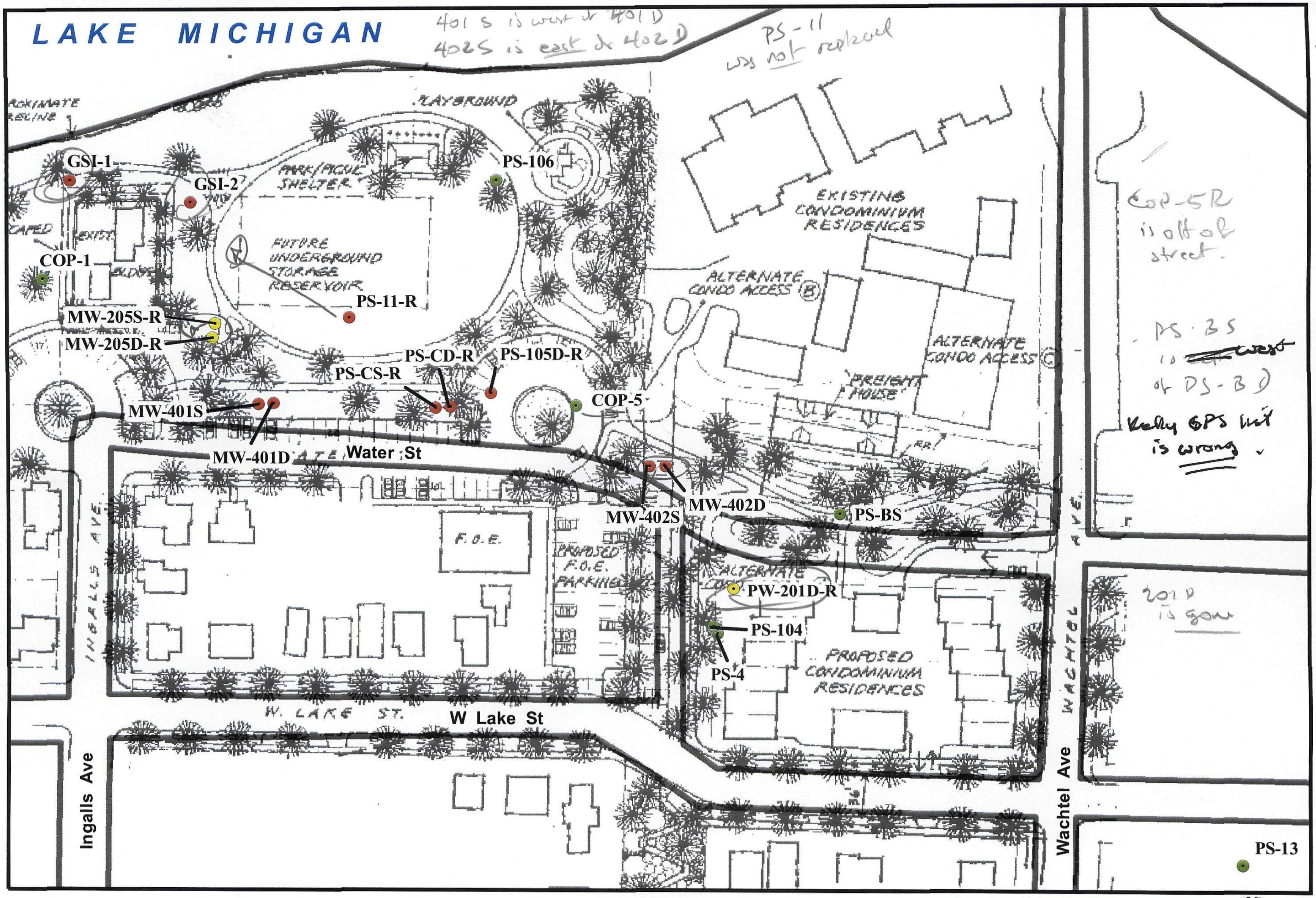

FIGURE 7. PLAN FOR FINAL MONITORING WELL NETWORK (PHASE II)

PETOSKEY MUNICIPAL WELL FIELD
PETOSKEY, MICHIGAN

- EXISTING WELLS
- WELLS REPLACED IN SAME LOCATION
- WELLS REPLACED IN NEW LOCATION

0 50 100 150 Feet

N

FIELDS

Table 1. Well data, Petoskey Municipal Well Field Superfund Site, Petoskey, Michigan, January, 2006. [NS, not sampled; PCE, perchloroethene; TCE, trichloroethene; THF, tetrahydrofurna; DCE, dichloroethene; C2S, carbon disulfide, DCFM, dichlorofouromethaneND, not detected; number by analyte is concentration in micrograms per liter]

Well Name	Location in Plume	Depth of Well	Location in Aquifer	Historical Data (6/02)	Historical Data (11/05)	Current Status (2006)	Future Status
PW-201D	Near Source	55	Mid		NS	Can't find	Locate and Evaluate
MW-202S	Near Source	15	Top	PCE/1	NS	Abandoned	Abandoned
MW-203S	Near Source	19	Top	TCE/63 DCE/4	NS	Abandoned	Abandoned
MW-203D	Near Source	42	Mid	ND	NS	Abandoned	Abandoned
MW-204	Near Source	19	Top	ND	NS	Abandoned	Abandoned
MW-205S	Distal	43	Mid	ND	NS	Collapsed	Abandon, Replace, and Maintain
MW-205D	Distal	60	Deep	ND	THF/6	Can't find	Abandon, Replace, and Maintain
PS-AS	Upgradient	23	Top	PCE/2	NS	Abandoned	Abandoned
PS-AD	Upgradient	43	Mid	ND	NS	Abandoned	Abandoned
PS-BS	Sidegradient	17	Top	TCE/2	DCFM/6.2 C2S/3.3	Acceptable	Maintain
PS-BD	Sidegradient	40	Mid	ND	ND	Acceptable	Maintain
PS-CS	Mid-Plume	18	Top	TCE/11	NS	Compromised	Repair and Maintain
PS-CD	Mid-Plume	41	Mid	TCE/49 DCE/10	TCE/54	Compromised	Repair and Maintain
PS-DS	Sidegradient	20	Top	Dry	ND	Can't find	Abandon
PS-DD	Sidegradient	40	Mid	ND	ND	Damaged	Abandon
PS-1R	Upgradient	20	Top	CF/1	ND	Acceptable	Maintain
PS-4	Near Source	24	Top	TCE/26	DCE/8.4 TCE/40 C2S/2	Acceptable	Maintain
PS-6	Upgradient	36	Top	ND	C2S/3.5	1" casing	Maintain
PS-10A	Distal-Side	24	Top	ND	ND	Acceptable	Maintain
PS-11	Distal	32	Top	TCE/3	TCE/7.8	Acceptable	Maintain. Abandon and replace if new storage reservior is built
PS-12	Sidegradient	40	Top	ND	ND	Compromised	Abandon
PS-13	Upgradient	35	Top	ND	ND	Acceptable	Maintain
PS-104	Near Source	45	Mid	ND	ND	Acceptable	Maintain
PS-105S	Mid-Plume	75	Deep	ND	ND	Partly infilled	Abandon

Table 1. Well data, Petoskey Municipal Well Field Superfund Site, Petoskey, Michigan, January, 2006. [NS, not sampled; PCE, perchloroethene; TCE, trichloroethene; THF, tetrahydrofurna; DCE, dichloroethene; C2S, carbon disulfide, DCFM, dichlorofouromethaneND, not detected; number by analyte is *concentration in micrograms per liter*]

Well Name	Location in Plume	Depth of Well	Location in Aquifer	Historical Data (6/02)	Historical Data (11/05)	Current Status (2006)	Future Status
PS-105D	Mid-Plume	115	Deep	ND	BM/66 CE/2.9	Partly infilled	Abandon
PS-106	Distal	39	Top	TCE/5	ND	Acceptable	Maintain
COP-1	Distal	24	Top	CF/4	CF/7.5	Acceptable	Maintain
COP-2	Distal	10	Top	TCE/1	NS	Dry	Maintain
COP-3	Distal	9	Top	ND	NS	Dry	Maintain
COP-4	Distal	12	Top	ND	NS	Dry	Maintain
COP-5	Mid-Plume	10	Top	TCE/5	NS	Compromised	Repair and Maintain or Abandon and Replace
Ingalls Well	Distal	15	Top	lab contaminants	NS	Abandoned	Abandoned