2011078042
R $111.00
D $0.00
COVE
08/29/2011 09:56:29 AM 21 Page(s)
Jefferson County, Colorado

C 111.00

This property is subject to an Environmental Covenant held by the Colorado Department of Public Health and Environment pursuant to section 25-15-321, C.R.S.

1-21

ENVIRONMENTAL COVENANT

Dorothy Flocas, as Trustee of Gus Flocas Exemption Trust B ("Flocas"), grants an Environmental Covenant ("Covenant") this 27 day of June, 2011 ~~, 2010~~ to the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and the Environment ("the Department") pursuant to §25-15-321 of the Colorado Hazardous Waste Act §25-15-101, *et seq.* The Department's address is 4300 Cherry Creek Drive South, Denver, CO 80246-1530.

WHEREAS, Flocas is the owner of certain commercial property located at 5330 West Alameda Avenue, Lakewood, CO, more particularly described in Attachment A, attached hereto and incorporated herein by reference as though fully set forth (hereinafter referred to as "the Property"); and

WHEREAS, pursuant to the Amended Corrective Action Plan, COD069724771, approved on January 8, 2008, the Property is the subject of remedial action pursuant to the *Colorado Hazardous Waste Act*, §25-15-301, *et seq.*

WHEREAS, the purpose of this Environmental Covenant is to ensure protection of human health and the environment by imposing certain use restrictions on the Property.

WHEREAS, Flocas desires to subject the Property to certain covenants and restrictions as provided in Article 15 of Title 25, Colorado Revised Statutes, which covenants and restrictions shall burden the Property, or any part thereof, their heirs, successors and assigns, and any persons using the land, as described herein, for the benefit of the Department and Owner.

NOW THEREFORE, Flocas hereby grants this Environmental Covenant to the Department and declares that the Property as described in the attached **Exhibit A** shall hereinafter be bound by, held, sold, and conveyed subject to the following requirements set forth in paragraphs 1 through 11 below, which shall run with the Property in perpetuity and bind Flocas and all parties now or subsequently having any right, title or interest in the Property, or any part thereof, and any persons using the land, as described herein. As used in this Environmental Covenant, the term OWNER means the then current record owner of the Property and, if any, any other person or entity otherwise legally authorized to make decisions regarding the transfer of the Property or placement of encumbrances on the Property, other than by the exercise of eminent domain.

1) Use restrictions. Unless modified pursuant to Paragraph 2 below, the following uses are prohibited on the property:

a) Groundwater beneath the Property shall not be removed; however, monitoring of groundwater constituents via monitoring wells is permitted.

b) The property shall not be used for residential purposes (i.e., single family housing, apartments, and mobile homes), and other sensitive uses involving subpopulation that are more susceptible to injury or illness from indoor air pollution such as children, elderly, and sick people (i.e., schools, daycare facilities, hospitals, and nursing homes).

c) No activity that violates or interferes with the activities specified in the December 7, 2007 Corrective Action Plan ("CAP"), as approved by the Department on January 8, 2008, attached as **Exhibit B** and any amendments thereto, if any, on file at the Department.

2) Modifications. This Covenant runs with the land and is perpetual, unless modified or terminated pursuant to this paragraph. OWNER may request that the Department approve a modification or termination of the Covenant. The request shall contain information showing that the proposed modification or termination shall, if implemented, ensure protection of human health and the environment. The Department shall review any submitted information, and may request additional information. If the Department determines that the proposal to modify or terminate the Covenant will ensure protection of human health and the environment, it shall approve the proposal. No modification or termination of this Covenant shall be effective unless the Department has approved such modification or termination in writing. Information to support a request for modification or termination may include one or more of the following:

a) a proposal to perform additional remedial work;

b) new information regarding the risks posed by the residual contamination, potentially including but not limited to indoor air and soil sampling data that demonstrates there are not and will not be exceedances of the residential air standard and Colorado Soil Evaluation Values for residential use within any structures;

c) information demonstrating that residual contamination has diminished;

d) information demonstrating that an engineered feature or structure is no longer necessary;

e) information demonstrating that the proposed modification would not adversely impact the remedy and is protective of human health and the environment; and

f) other appropriate supporting information.

3) Conveyances. OWNER shall notify the Department at least fifteen (15) days in advance of the closing on any proposed sale or other conveyance of any interest in any or all of the Property.

Flocas, has caused this instrument to be executed this 27 day of June, ~~2010~~ 2011.

By: Dorothy Flocas

Title: _____

STATE OF California)
)
COUNTY OF San Mateo)

The foregoing instrument was acknowledged before me this 27 day of June, ~~2010~~ 2011, by Dorothy Flocas.

JESSICA C. POLLARD
Commission # 1761841
Notary Public - California
San Mateo County
My Comm. Expires Aug 16, 2011

Jessica Pollard
Notary Public

20 Maple Avenue
Address

SSF, CA 94080

My Commission expires: Aug. 16, 2011

Accepted by the Colorado Department of Public Health and Environment this 18th day of August, 2011. ~~, 2010.~~

By: Gary W. Baughman

Title: Director, HMWMD

STATE OF COLORADO)
)
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 18 day of AUGUST, 2011, by GARY BAUGHMAN on behalf of the Colorado Department of Public Health and Environment.

Claudette M. Ferris
Notary Public

4300 Cherry Creek Dr So
Address

Denver, CO 80246

My Commission expires: October 20, 2011

RECEPTION NO. 90095974

EXHIBIT "A"

All that real property situated in the County of Jefferson and State of Colorado, to wit: All that part of the North 192 feet of Block 7, PORTER & ANTHONY'S SUBDIVISION, and all those portions of the North 192 feet of the East one-half of vacated South Benton Street (formerly Dover Avenue) and of the West one-half of vacated South Ames Street (formerly Lansing Avenue), which lie Southerly of the Southerly line of Alameda Avenue, as said Southerly line is described in Book 377 at Page 318 of Jefferson County Records, except the West 150 feet of the East 175 feet of the West one-half of the Northeast one-quarter of the Northeast one-quarter of the Northeast one-quarter of Section 13, Township 4 South, Range 69 West of the 6th P.M., and Except the East 25 feet of the North 192 feet of the West one-half of the Northeast one-quarter of the Northeast one-quarter of the Northeast one-quarrer of Section 13, Township 4 South, Range 69 West, as described in Book 1321 at Page 460, for road purposes only, all in the County of Jefferson, State of Colorado.

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the said party of the first part, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.

TO HAVE AND TO HOLD the said premises above bargained and described with the appurtenances, unto the said party of the second part, his heirs and assigns forever. And the said part y of the first part, for it self, its heirs, executors, and administrators, does covenant, grant, bargain, and agree to and with the said part y of the second part, his heirs and assigns, that at the time of the ensealing and delivery of these presents, it is well seized of the premises above conveyed, as of good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and has good right, full power and lawful authority to grant, bargain, sell and convey the same in manner and form as aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments and encumbrances of whatever kind or nature soever. except taxes for 1968 and subsequent years; Except Right of way for ditch over Block 7 to irrigate Block 8 as reserved in Deed recorded January 4, 1926 in Book 286 at Page 50; and Except any tax, assessment, fees, or charges, by reason of the inclusion of the subject property in Bancroft Fire Protection Disrrict and South Jeffco Metropolitan Recreation and Park District,

Commonly known as: 5330 West Alameda, Lakewood, Colorado

Environmental Covenant Exhibit A

Pinyon
Environmental Engineering Resources

9600 W. Jewell Ave., Suite 7
Lakewood, Colorado 80232

303.980.5200 1.888.641.7337
303.980.0099 fax

www.Pinyon-Env.com

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December 7, 2007

Mr. Walter Avramenko
Colorado Department of Public Health and Environment
4300 Cherry Creek Dr. South
Denver, Colorado 80246-1530

COD069724771

Subject: Corrective Action Plan, Former Flocas Dry Cleaner, COD069724771

Dear Mr. Avramenko:

Pinyon Environmental Engineering Resources, Inc. (Pinyon), respectfully submits this Corrective Action Plan (CAP) to complete remedial activities at the former Flocas Dry Cleaner site, located at 5330 West Alameda, in Lakewood, Colorado (Figure 1).

A tetrachloroethene (PCE) release has been documented, including soil contamination in the rear of the facility where waste solvent drums were historically stored. PCE has also been detected in the ground water on the subject site in front of the facility and on the adjacent down-gradient property at 5300 West Alameda. The Colorado Department of Public Health and Environment (CDPHE) has requested that remedial action be implemented, with the focus on the soil contamination identified in the rear of the facility. Dry cleaning continues to operate at the facility, now called Von Feldt Cleaners.

Pinyon conducted a characterization of the site during 2006 and 2007, including drilling and sampling soil borings and ground-water monitoring wells (Figure 2, Tables 1 through 3). CDPHE was provided informal reports during that time period. These data, and subsequent correspondence between Pinyon and the CDPHE, are the basis for the activities incorporated into this CAP.

PCE was detected in ground water at all nine of the monitoring wells, and above Colorado Ground-Water Drinking Water Standards in six wells (Table 3, Figure 3). The contaminant plume generally flows east-northeast across the subject site and the adjacent property located at 5300 West Alameda. The location of the soil boring behind the facility (SB-1) was selected based on the results of a soil gas survey. PCE was detected in the soil at 713 micrograms per kilogram (µg/kg) (Table 2). This is the highest PCE concentration in soil observed at any boring on the site. Because this area was known to have been used as storage for waste solvent, the remediation of this source area is one focus of this CAP.

The treatment of this source area is not expected to result in the immediate cleanup of PCE in the down gradient ground water that would allow unrestricted use of the subject or adjacent properties.

Environmental
Covenant
Exhibit B

DRAFT

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As a result, Pinyon has included a second focus of this CAP, which is to secure agreements from the property owner of the subject site and the property owner of the adjacent, down-gradient property to sign a covenant related to future land use. The agreements would be in the form of environmental covenants, acceptable to the State. These agreements are in process.

The details of the Corrective Action Plan are contained in Attachment A to this document.

Sincerely,

PINYON ENVIRONMENTAL ENGINEERING RESOURCES, INC.

Jim Viellenave

Attachments

Z:\PROJECTS\10655501 Flocas Dry Cleaner\Remediation\8601 CAP Preparation\CAP.wpd

Business Ethics Award Winner
Honesty-Ethics-Community

ATTACHMENT A
Proposed Corrective Action Plan
Former Flocas Dry Cleaner Facility
5330 West Alameda, Lakewood, Colorado

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Task 1 - Utility Location and Access Agreements
Prior to field services, Pinyon will arrange for an independent company to mark the locations of underground public utilities in the survey area. If deemed necessary, Pinyon will also arrange for a company to locate any private utilities prior to initiation of field services.

A main focus of the corrective action will be excavation at the rear of the facility, where access will be difficult. It would be made considerably easier and safer if it were possible to temporarily remove a portion of the fence on the south property line and approach the facility from the Wellington Condominiums parking lot. Pinyon will approach the Wellington Condominium Association (as Pinyon did successfully for drilling) and request that access be granted again. Pinyon proposes to utilize the same License Agreement form that was used previously.

Upon completion of the above, Pinyon will finalize the excavation plan, depending on the success in obtaining a License Agreement from Wellington Condominium Association.

Task 2 - Regional Water Well Survey
As requested by CDPHE, Pinyon will conduct a survey of all water wells listed by the State Engineer within one mile of the outside boundaries of the combined properties, 5330 and 5300 West Alameda. Pinyon will document which of the wells are used to produce water for any identified purposes. On the basis of this information, Pinyon will recommend any additional actions that may be required to verify that no exposure to contamination is occurring or will occur.

Task 3 - Excavation and Installation of Re-usable Injectors
Pinyon proposes to excavate the soil to approximately four feet in the area of the former waste solvent storage, located just west of the back door of the facility. The excavation is planned to be approximately four feet wide and eight feet long. Subtasks will include:

- Excavate initially to four feet below grade. This level is below the "high" concentration observed in the soil boring. Rather than over excavate, it is more prudent and cost effective to let the laboratory results guide the program.

- Profile the soil to determine if it will be considered a hazardous waste. This may include a "Contained Out" step for analysis and then disposal.

- Transport soil to Denver Arapahoe landfill for disposal. If testing finds that the soil cannot be disposed of as non-hazardous, it will be disposed of in accordance with Colorado regulations.

- Acquire soil samples from the floor and four sides of the pit for analysis by EPA method 8260. The excavation will be expanded to the extent required by the analytical results. The excavation will be expanded only if values exceed CDPHE's recommended cleanup level for soil protective of ground water of 1 875 milligrams per kilogram (mg/kg).

- Install a single injector loop in the base of the excavation. The loop will consist of one-inch schedule 40 PVC perforated pipe, and will be laid in a sand bed four inches thick in the base of the hole. The loop will be connected to a one-inch schedule 40 PVC riser pipe extending to the ground surface. The excavation will be backfilled with clean soil. The riser will be equipped with a connector for use in periodic injections of potassium permanganate using a transportable tank and mixing assembly. Between injections, the injector riser will be equipped with a J-Plug and lock to prevent unauthorized use.

- Restore the site (and adjacent Wellington Condominium parking lot and fence) to previous conditions.

- Seed the topsoil with grass seed to match current conditions at the site.

Task 4 - Periodic Injection of Chemical Oxidant

Immediately upon completion of the installation of the injector loop, Pinyon will commence injections of permanganate through the injection loop into the soil. Subsequently, Pinyon will conduct periodic injections in accordance with the specifications below, and as the results of monitoring dictate. The procedures to be used are:

- Mix approximately 100 gallons of potassium or sodium permanganate solution at approximately 1% by weight.

- Inject the 100 gallons of chemical oxidant into the injection loop. This will promote continued destruction of residual PCE in the soil.

- Repeat the injections on approximately a quarterly basis for one year, subject to monitoring efforts. This scope assumes a maximum of six events over two years.

Task 5 - Monitoring

Pinyon will initiate ground-water monitoring at the site to support the effort to obtain an NFA from CDPHE. There are nine monitoring wells at the site. Pinyon proposes to sample all nine wells for the first round. After evaluation of the first round data, it may be possible to reduce the number of wells monitored. Pinyon proposes to conduct a dynamic monitoring program, responsive to the results of remediation as evident in the down-gradient wells. The initial monitoring will be as follows

- Quarterly monitoring for two years of all wells for the following field parameters: oxidation-reduction potential (ORP or Eh), color, dissolved oxygen, temperature, conductivity, pH, and depth to water table. This scope of work includes a total of eight events over two years.

- Chemical oxidation is only operative if the Eh or ORP exceeds approximately +250mv. Permanganate is wasted if there is a purple color in the down-gradient wells. Therefore, the amount and frequency of oxidant injection will be governed by these measurements.

- Semi-annual sampling for two years of analysis for volatile organic compounds using EPA Method 8260. These data will be used to document changes in concentration of PCE following the implementation of the corrective action plan. This scope of work assumes four events over two years.

Procedures include:

- Prior to sampling, the depth to water will be measured with an electric water level indicator. This information will be used to analyze the direction of ground-water flow, and to calculate the volume of water to remove prior to sampling.

- Water will be removed, or purged, from each well. During purging, ground-water pH, Eh, DO, temperature and conductivity will be monitored. Once these parameters have stabilized, the ground-water sample will be collected. The sample will be containerized in bottles provided by the analytical laboratory, labeled, and placed on ice in a cooler.

- The ground-water samples will be submitted under proper chain-of-custody procedures to Origins Lab , in Denver, Colorado, for analysis. The samples will be analyzed for volatile organic compounds (VOCs), using modified EPA Method 8260.

- Water removed from the ground-water monitoring wells during development and sampling will be containerized in drums and stored on the site. Purge water will be disposed of in accordance with state regulations.

Task 6 - Photo Documentation of Land Uses

In accordance with the request by CDPHE, Pinyon will document the land use and map the facilities located at both 5300 and 5330 West Alameda. Subject to obtaining permission from the owners and operators of both facilities, the documentation will include indoor and outdoor photography of the buildings, rooms, utilities and appurtenances, signs, etc. Pinyon will prepare both a photo log and a map of each site and building to support the enforcement of the conditions of the covenants that both parties will be required to sign.

Task 7 - Indoor Air Sample

Pinyon will acquire and have analyzed one indoor air sample by method TO-15 for PCE and other volatile organics from an approved location inside the building located at 5300 West Alameda. The data will be reported to CDPHE for assessment of the risks associated with volatile organics in the indoor working environment.

Task 8 - Reporting

Pinyon will prepare a report of the findings of each monitoring event for submittal to CDPHE. The report will include:

- A discussion outlining the work performed and the data obtained.

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- A statistical analysis of the contaminants of concern, with both tabular and graphical presentation of the trends observed.

- Conclusions regarding the trends in the concentration of contaminants of concern, with particular emphasis on PCE.

- Recommendations regarding future work will also be included.

Task 9 - Covenants by Land Owners
Pinyon will undertake to have the owners of the two respective properties, 5300 and 5330 West Alameda, agree to and sign a covenant restricting land and resource usage, in conformity with the regulations of CDPHE.

Task 10 - No Further Action Application
At the completion of two years of remediation activities and related monitoring, Pinyon will prepare an application to the CDPHE for a No Further Action determination. Included in this task will be a comprehensive summary of all of the data from the corrective action program.

Table 1
Ground-Water Elevation Data
Flocas Dry Cleaners
March 28 and 29, 2007

Well	TOC Elevation[1]	Depth to Water[2]	Ground-Water Elevation[2]
MW-1	100.20	17.48	82.72
MW-2	99.97	17.50	82.47
MW-3	99.11	17.38	81.73
MW-4	96.56	15.82	80.74
MW-5	97.49	17.09	80.40
MW-6	97.70	NM	NM
MW-7	95.50	15.15	80.35
MW-8	99.12	17.81	81.31
MW-9	99.84	18.83	81.01

Notes:
1 Measured from the top of the casing in feet
2 Based on an arbitrary benchmark
MW Monitoring Well
TOC Top of Casing

Table 2
Soil Sample Concentration Data
Flocas Dry Cleaners

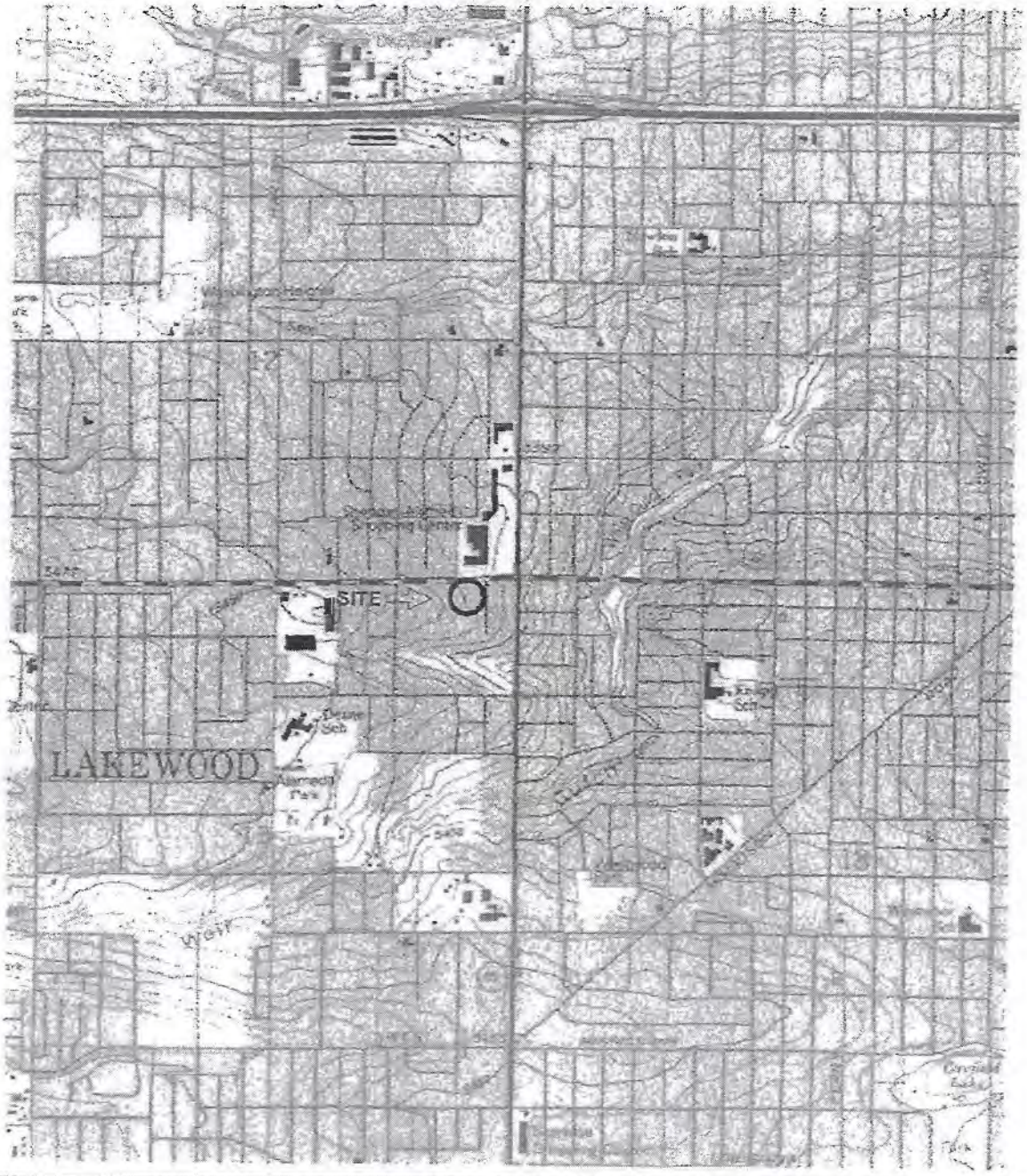
Soil Sample	Date	Sample Depth	PCE	TCE	Chloroform	4-Isopropyl-toluene	cis-1,2-DCE	sec-Butyl-benzene
MW-1	11/15/06	30-32	ND	ND	ND	ND	ND	ND
MW-2	11/15/06	20-22	ND	ND	ND	ND	ND	ND
MW-3	11/15/06	20-22	2.72	ND	ND	ND	ND	ND
MW-4	11/15/06	20-22	ND	ND	ND	0.54	0.79	0.72
MW-5	11/17/06	20-22	ND	ND	ND	ND	ND	ND
MW-6	1/16/07	20-22	ND	ND	ND	ND	ND	ND
MW-7	1/16/07	20-22	ND	ND	ND	ND	ND	ND
MW-8	3/22/07	NA	NA	NA	NA	NA	NA	NA
MW-9	3/22/07	NA	NA	NA	NA	NA	NA	NA
SB-1	11/21/06	2-4	713.0	2.02	ND	ND	ND	ND

Notes:
Results reported in micrograms per kilogram (ug/kg)
ND *Non-detect*
NA *Not Analyzed*
PCE *Perchloroethylene*
TCE *Trichloroethene*
DCE *Dichloroethene*

Table 3
Ground-Water Sample Concentration Data
Flocas Dry Cleaners

Sample Location	Date Sampled	PCE	TCE	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
MW-1	11/21/06	5.39	ND	ND	ND
MW-2	11/21/06	11.3	ND	ND	ND
MW-3	11/21/06	108	ND	ND	ND
MW-4	11/21/06	35.8	7.67	0.79	ND
MW-5	11/21/06	131	ND	ND	ND
MW-6	1/22/07	4.21	ND	ND	ND
MW-7	1/22/07	115	2.69	ND	ND
MW-8	3/28/07	3.67	ND	ND	ND
MW-9	3/28/07	1.96	ND	ND	ND
CDPHE Ground-Water Standard		5	5	70	100

Notes:
Results reported in micrograms per liter (mg/L)
ND Non-detect
PCE Perchloroethylene
TCE Trichloroethene
CDPHE Colorado Department of Public Health and Environment



LEGEND

USGS 7.5' Topographic Map
Fort Logan, 1990

N

SITE

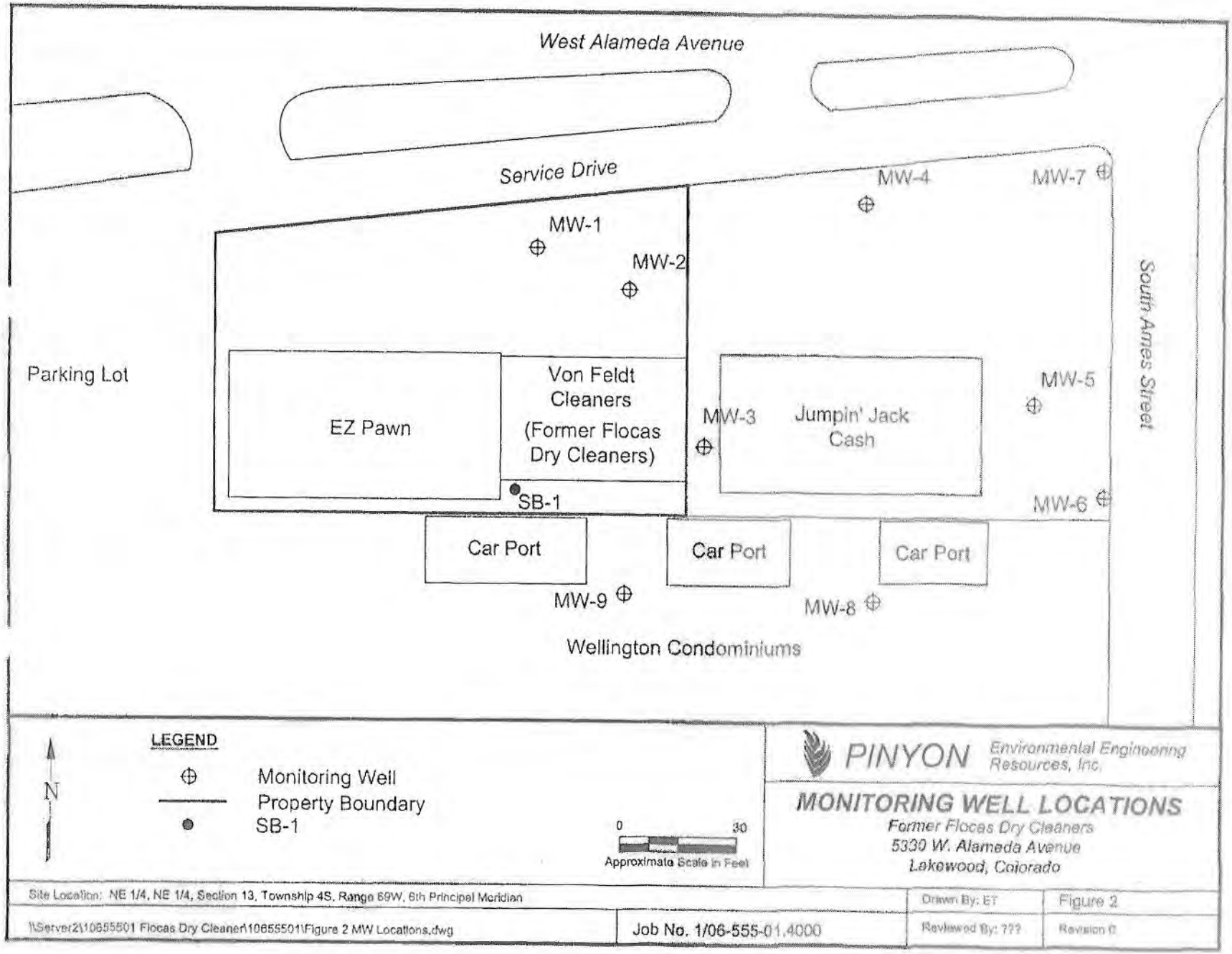
0 1,500
Approximate Scale in Feet

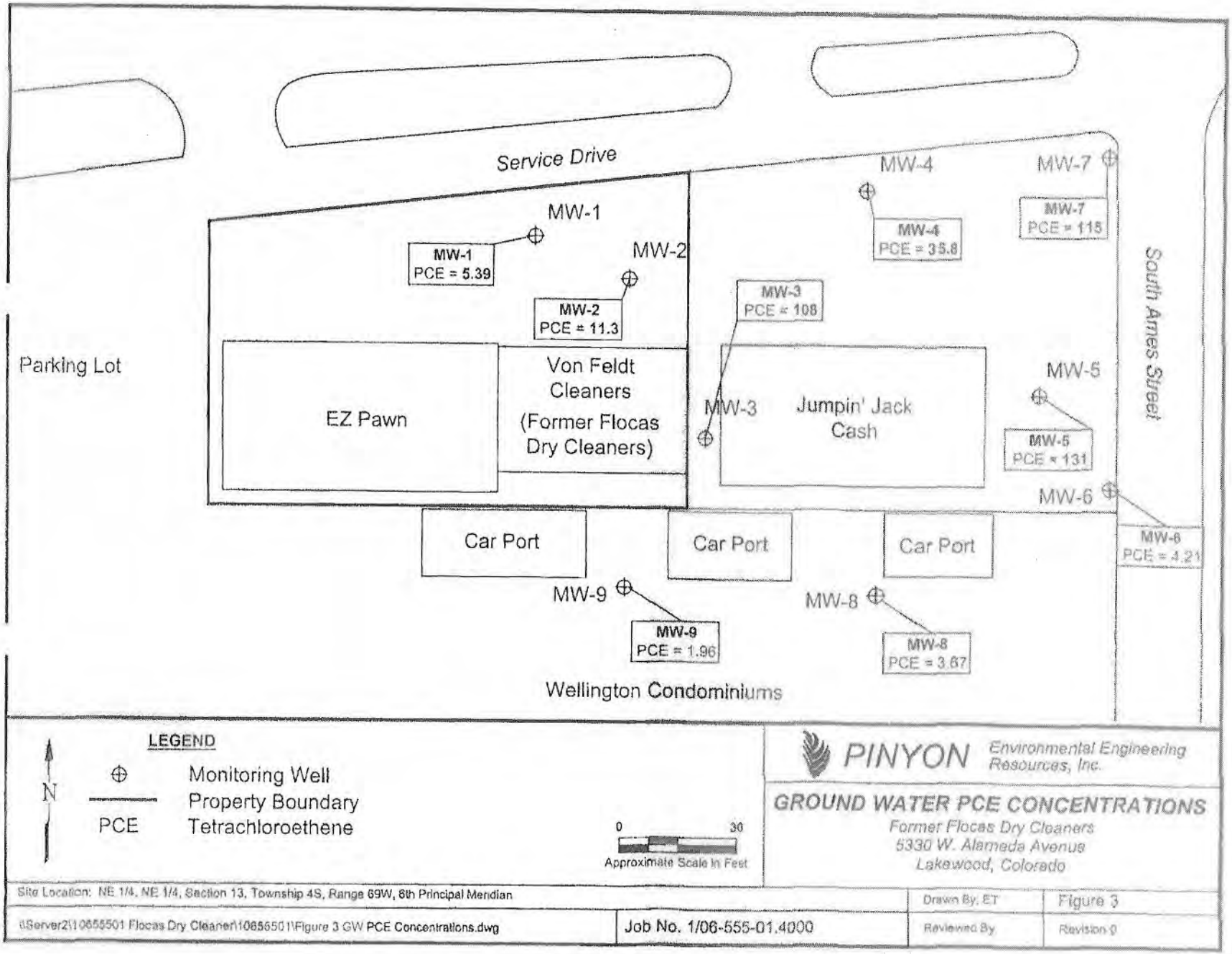
PINYON Environmental Engineering Resources, Inc.

SITE LOCATION

Flocas Dry Cleaner
5300 West Alameda Avenue
Lakewood, Colorado

Site Location: NE 1/4, NE 1/4, Section 13, Township 4S, Range 69W, 6th Principal Meridian		Drawn By: GNL	Figure 1
\\Server2\10655501 Flocas Dry Cleaner\10655501 Figure 1.dwg	Job No. 1/06-555-01.4000	Reviewed By: EP	Revision 0


West Alameda Avenue
Service Drive
South Ames Street
Parking Lot
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
EZ Pawn
Von Feldt Cleaners
(Former Flocas Dry Cleaners)
Jumpin' Jack Cash
SB-1
Car Port
Car Port
Car Port
Wellington Condominiums
N
LEGEND
Monitoring Well
Property Boundary
SB-1
0
30
Approximate Scale in Feet
PINYON
Environmental Engineering Resources, Inc.
MONITORING WELL LOCATIONS
Former Flocas Dry Cleaners
5330 W. Alameda Avenue
Lakewood, Colorado
Site Location: NE 1/4, NE 1/4, Section 13, Township 4S, Range 69W, 6th Principal Meridian
Drawn By: ET
Figure 2
\\Server2\10655501 Flocas Dry Cleaner\10655501\Figure 2 MW Locations.dwg
Job No. 1/06-555-01.4000
Reviewed By: ???
Revision 0


Service Drive
MW-1
MW-1
PCE = 5.39
MW-2
MW-2
PCE = 11.3
MW-4
MW-4
PCE = 35.8
MW-7
MW-7
PCE = 115
MW-3
PCE = 108
South Ames Street
Parking Lot
EZ Pawn
Von Feldt
Cleaners
(Former Flocas
Dry Cleaners)
MW-3
Jumpin' Jack
Cash
MW-5
MW-5
PCE = 131
MW-6
MW-6
PCE = 4.21
Car Port
Car Port
Car Port
MW-9
MW-9
PCE = 1.96
MW-8
MW-8
PCE = 3.67
Wellington Condominiums
N
LEGEND
Monitoring Well
Property Boundary
PCE
Tetrachloroethene
0
30
Approximate Scale In Feet
PINYON
Environmental Engineering
Resources, Inc.
GROUND WATER PCE CONCENTRATIONS
Former Flocas Dry Cleaners
5330 W. Alameda Avenue
Lakewood, Colorado
Site Location: NE 1/4, NE 1/4, Section 13, Township 4S, Range 69W, 6th Principal Meridian
Drawn By: ET
Figure 3
\\Server2\10655501 Flocas Dry Cleaner\10655501\Figure 3 GW PCE Concentrations.dwg
Job No. 1/06-555-01.4000
Reviewed By
Revision 0

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

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January 8, 2008

Mr. Jim Viellenave
Pinyon Environmental Engineering Resources, Inc.
9600 West Jewell Avenue, Suite 1
Lakewood, Colorado 80232

RE: Corrective Action Plan, Former Flocas Dry Cleaner
5330 W. Alameda Avenue, Lakewood, Colorado
COD069724771

Dear Mr. Viellenave:

The Colorado Department of Public Health and Environment's Hazardous Materials and Waste Management Division (the "Division") has reviewed the December 7, 2007 proposed Corrective Action Plan (the "CAP") to be implemented at the former Flocas Dry Cleaner facility (presently operated as the Von Feldt Cleaners & Shirt Laundry) located at 5330 W. Alameda Avenue in Lakewood (the "facility"). This CAP was submitted pursuant to 6 CCR 1007-3, Section 100.26 of the Colorado Hazardous Waste Regulations. The purpose of the CAP is to remediate the release of the dry cleaning solvent tetrachloroethene ("PCE") found in both soil and ground water at the facility.

The Division hereby approves the activities outlined in the December 7, 2007 CAP on condition that the following modifications are incorporated into the plan:

1. A short report will be submitted to the Division within 60 days following each of the quarterly ground water sampling events. The first quarterly report must include boring logs and well construction details for all wells that have been constructed and sampled. The Division had originally requested this information in its September 25, 2007 letter commenting on the proposed CAP. As was stated in that letter, the Division reserves the right to further modify the CAP if the logs suggest that the existing monitoring well network has not adequately characterized the vertical extent of contamination at the site, perhaps necessitating the collection of additional samples from the shallow aquifer (e.g., there is a possibility that higher concentrations of vertically stratified PCE may exist on or off-site). The subsequent quarterly ground water monitoring reports may be limited to a) copies of the laboratory data reports (for all EPA Method 8260 constituents), b) a contour map showing the local potentiometric surface based on water level measurements obtained from each of the wells and c) an analysis of whether water quality is improving or not.

2. The CAP will include a well survey with a radius of 1 mile confirming that no one is using shallow ground water, and potentially exposed to contamination, downgradient of the facility. If wells are present that could potentially be impacted by the release at 5330 W. Alameda Avenue, the Division reserves the right to impose additional actions that it deems necessary to verify that no exposure to contamination is occurring or will occur. 20

3. Pinyon proposes to excavate the soil in the former solvent storage area down to a depth of four feet. Although confirmation soil samples will be collected from the floor and four sides of the excavation, the Division recommends that field screening techniques (head space analysis) be employed while excavating to get a real-time sense of what levels of contamination are being removed and what may be left in place prior to backfilling. Field screening test results may indicate the presence of substantial contamination remaining in the excavation once the desired depth is achieved, potentially indicating that more soil should be removed before the hole is backfilled. The Division encourages Pinyon and their client to remove as much soil contamination as is reasonable possible given the confined location, in order to eliminate as much of the ground water impacting soil.

4. The CAP proposes to inject approximately 100 gallons of permanganate into the gravel backfilled excavation in the former solvent storage area to promote the destruction of residual PCE in soil. The remedial objective of this oxidative treatment system should not only be treatment of the soil but the treatment of ground water as well. Site-wide ground water should improve by eliminating the source area in the soil (the presumed only source area based on limited soil sampling conducted at the site) and treating ground water to similarly destroy PCE and its degradation products. The Division is more likely to grant an NFA request at the completion of two years of remediation when there is clear evidence that ground water quality is improving, will continue to improve without active treatment and off-site impacts (to the east of 5300 W. Alameda Avenue) will be minimized or perhaps eliminated in the future.

5. The advantage of permanganate over some other chemical oxidants is that the slow rate of reaction allows for greater transport distances during injection delivery in medium and high permeability materials. Its persistence contributes to diffusive transport of the oxidant, permitting deeper penetration of the oxidant into an aquifer containing slow-moving contaminants. The expectation is that the presence of permanganate will be evident in more wells than just those close to the source area, indicating that treatment of sorbed aquifer materials and ground water is occurring outside the immediate source area. A wider distribution of permanganate should help accelerate the cleanup of ground water, a key goal of this CAP.

6. Permanganate persistence in the subsurface is proportional to the concentration injected, and inversely proportional to the oxidant demand by the aquifer material and contaminants. The quantity and/or concentration of the permanganate solution injected should be adjusted based on ground water chemistry and aquifer characteristics, as determined through an evaluation of the quarterly ground water monitoring data.

7. Approval of the CAP, as proposed, is contingent on placing land use restrictions on both the facility and the immediate downgradient property (5330 West Alameda). The plans states that permission to

place an environmental covenant on the two properties has yet to be obtained. No schedule was provided determining when the covenants would be drafted, negotiated and filed with the county making the use restrictions fully enforceable. The Division hereby incorporates the following schedule into the CAP:
February 29, 2008 – The Division is notified that the property owners of both 5300 and 5330 West Alameda are willing to place environmental covenants on their respective properties.
April 30, 2008 - The Division provides the property owners of both 5300 and 5330 West Alameda with a draft environmental covenant for review, negotiation and approval.
June 30, 2008 – Finalize the draft environmental covenants and record with the appropriate local government entity in order to make it fully effective.

Two things should be noted with regard to the environmental covenants. The first is that if site conditions improve and stated use restrictions are no longer required to protect human health and the environment, the environmental covenants can be modified or terminated. This should be an incentive to do whatever is possible in order to remediate the contamination caused by the PCE and its degradation products. Secondly, Section 100.31(b)(5) of the Colorado Hazardous Waste regulations imposes a $1,000 annual fee per each geographically distinct area subject to environmental use restriction. This requirement should be further incentive to aggressively eliminate the source area and cleanup ground water so that an environmental covenant is not required.

In the event either one or both of the property owners refuse to place use restrictions on their property, the Division reserves the right to impose additional actions that it deems necessary to verify that there is only one source area located on the facility (i.e., inside the building), better define the extent of ground water contamination and/or more aggressively remediate ground water.

8. The Division reserves the right to impose additional work requirements if the monitoring data collected over the next two years suggests that ground water quality will not improve. More active measures may be required at that time.

The Division recommends that the CAP be implemented as soon as is technically feasible.

Please don't hesitate to contact me at either 303-692-3362 or walter.avramenko@state.co.us to discuss any of the plan modifications noted above.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Corrective Action Unit
Solid and Hazardous Waste Program

cc: Mr. Eric Voogt - Inman Flynn Biesterfeld Brentlinger & Moritz