

**Lot 460 Operation and
Maintenance Plan**

Operation and Maintenance Plan

Lot 460 Pengelly Road Site Flint, Michigan

Prepared for:
General Motors Corporation
Detroit, Michigan

January 2005

REPORT

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Scott L. Cormier, P.E.
Senior Managing Engineer

January 2005



O'BRIEN & GERE
ENGINEERS, INC.

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2. Completed Lot 460 Inspection Diagram (November 19, 2004)

1. Introduction

This Operation and Maintenance (O&M) Plan was prepared for Lot 460 of the Dixieland Subdivision (Figure 1). Remedial actions for Lot 460 were implemented in accordance with Rule 299.5532 (1), (2) and (4) and the following documents provided in the Closure Report:

- February 16, 1996, O'Brien & Gere Engineers, Inc. (O'Brien & Gere) Phase I Investigation Work Plan
- March 26, 1996 reply letter to MDEQ comment letter for the February 16, 1996 Work Plan.
- May 7, 1996, O'Brien & Gere response to Michigan Department of Environmental Quality (MDEQ) comments letter
- September 16, 1996, Phase II letter work plan and September 30, 1996, MDEQ approval
- December 1996 PR Investigation Report
- May 25, 2000, O'Brien & Gere, Remedial Action Plan for a Generic Residential and Limited Residential Closure (Pengelly Road Remedial Action Plan)
- May 30, 2000 letter to MDEQ respond to Remedial Action Plan.
- August 1, 2000, Michigan Department of Environmental Quality (MDEQ) Response to Incomplete Remedial Action Plan
- October 6, 2000, O'Brien and Gere response to MDEQ letter of August 1, 2000.
- October 30, 2000, O'Brien & Gere, Pengelly Apartment Work Plan.
- February 26, 2002, O'Brien & Gere, Work Plan – Soil Boring Investigation in Roadway
- June 2, 2002, MDEQ Approval of the February 2002 Work Plan.

Based on completion of the remedial actions at Lot 460 a "Limited Residential" categorical closure has been achieved. The remedial actions completed at Lot 460 consisted of the following:

- Excavation of contaminated surface soil on Lot 460, placement of 2 ft of clean backfill (with vegetative cover) as a soil cover, and imposition of a deed restriction.

The excavation of contaminated surface soil and the installation of a 2-ft soil cover on Lot 460 (tax parcel No. 41-29-151-001) resulted in the "Limited Residential" closure for the Site. The soil cover will be maintained with the performance of O&M activities in accordance with Mich. Admin. Code Rule 299.5538.

On November 19, 2004, O'Brien & Gere, on behalf of General Motors Corporation, completed maintenance activities at Lot 460 for the purpose of maintaining the integrity of the soil cover .

2. Responsible O&M Personnel

Beginning in the spring of 2005, maintenance activities will be conducted by representatives of the Owner. The Owner's contact person is:

Mr. Robert S. Metcalf
General Motors Corporation
Remediation Team
902 East Leith Street
Mail Code #485-185-020
Flint, Michigan 48550-8502
(810) 236-0300

3. Maintenance Activities

Regular maintenance of Lot 460 will consist of semi-annual visual inspections of the soil cover, mowing, reseeding, as necessary, and filling in settled areas. These maintenance activities will be undertaken as required to maintain the integrity of the soil cover. Inspections will be performed twice per year and mowing will be performed a minimum of twice per year.

The semi-annual inspections will include completion of an Inspection Diagram by the Owners representative. A copy of the Inspection Diagram to be used is included in Attachment 1.

The first semi-annual inspection, performed by O'Brien & Gere, was completed on November 19, 2004. A completed Inspection Diagram is included in Attachment 2.

3.1. Implementation Schedule

The following annual inspection schedule has been and will continue to be implemented:

Table 3-1. Inspection schedule

Date	Activity	Notes
Fall 2004	inspection	Completed by O'Brien & Gere
Spring 2005	inspection	To be completed by Owner's rep.
Fall 2005	inspection	To be completed by Owner's rep.
Spring 2006	inspection	To be completed by Owner's rep.
Fall 2006	inspection	To be completed by Owner's rep.

Routine vegetative cover care consists of mowing and inspections, as described above.

4. Critical Systems

Critical components of the remedial actions for Lot 460 are described below:

- The 2-ft of clean fill and topsoil with vegetative cover,
- Lot 460 Declaration of Restrictive Covenant,
- Genesee County Easement Agreement for the Schram County Drain, and
- Easement notification to Consumers Energy Company.

5. Design and Construction

Based on the presence of subsurface waste fill identified by the MDEQ, an investigation of Lot 460 and the surrounding area was initiated. The results of this investigation, documented in the Pengelly Road Closure Report (O'Brien & Gere, April 2004), identified three substances of potential concern (arsenic, lead, and benzo(a)pyrene) above applicable MDEQ criteria.

The Closure Report identified excavation and disposal of contaminated surface soil along with limited excavation (to a depth of 2 ft) and a Declaration of Restrictive Covenant for Lot 460 as the final remedy for this site. In the interest of timing, the final remedy was implemented as an interim remedial action.

Excavation and disposal of the surface and subsurface soil, placement of a minimum of 2-ft of clean soil as backfill, grading and reseeded were completed between July 6, 2000 and October 13, 2000.

6. Emergency Plan

The Emergency contact person is:

Mr. Robert S. Metcalf
General Motors Corporation
Remediation Team
902 East Leith Street
Mail Code #485-185-020
Flint, Michigan 48550-8502
(810) 236-0300

7. Contingency Plan

The Contingency Plan for Lot 460 consists of reseeded, as necessary, and filling in settled areas. These maintenance activities will be undertaken as required to maintain the integrity of the soil cover. Following completion of maintenance activities, an additional inspection will be performed to document satisfactory completion of the work.

8. Additional Information

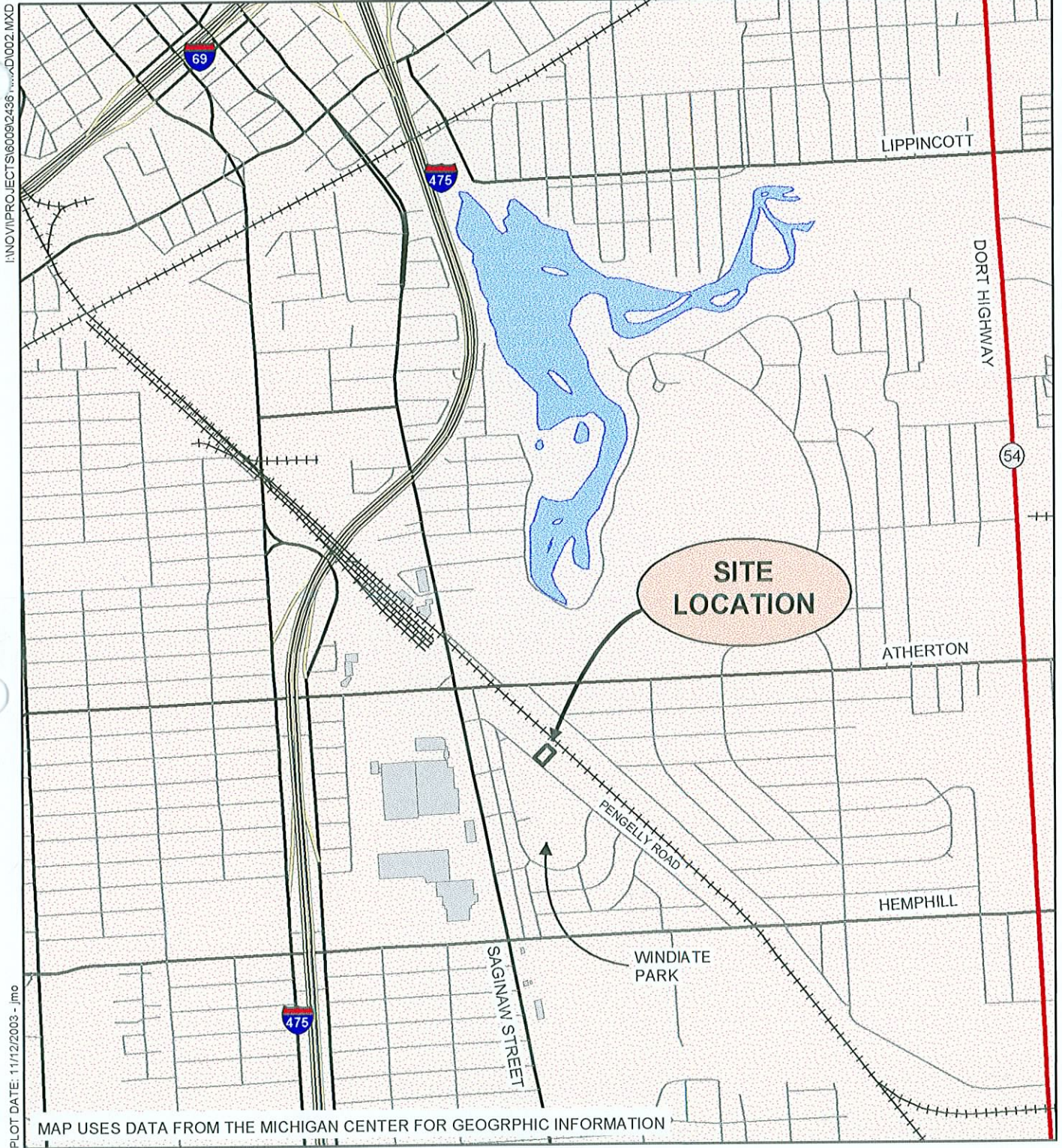
Lot 460 is a privately owned vacant lot covered with grass and has an easement for the Schram County Drain, which passes through the lot at a depth of approximately 4ft. to 5ft. below ground surface as depicted on Figure 2. The easement holder for the Drain is the Genesee County Drain Commission. Consumers Energy Company is also an easement holder.

Table 1
Operation and Maintenance Cost Estimate
Lot 460 - Pengelly Road Site
Flint, MI

Task Description	Item	Task Frequency	Hours per Task	Hours per Year	Hourly Rate	Lump Sum per Task	Estimated Annual Cost
Semi-Annual Cover	Labor	2	2	4	\$50		\$200
Inspection	Expenses	2	Lump Sum			\$25	\$50
Cover Maintenance (mowing/reseeding, etc.)	Labor	2	Lump Sum			\$500	\$1,000
	Materials	1	Lump Sum			\$100	\$100
Soil Cover Repairs Contractor	Labor	1	Lump Sum			\$250	\$250
	Materials	1	Lump Sum			\$100	\$100
Soil Cover Repair Inspection & Follow-up	Labor	1	2	2	\$50		\$100
	Expenses	1	Lump Sum			\$50	\$50
MDEQ Annual Oversight	Labor	1	5	5	\$50		\$250
Total Annual Estimated O&M Costs							\$2,100

- Notes:
- 1 - Mowing is to be performed two times per year.
 - 2 - Watering/fertilizer is not required.
 - 3 - Soil cover repair and inspection after repairs will be performed once per year.
 - 4 - Inspection & reporting labor rates are based upon third-party consultant, mowing based on local landscaper, and repair costs are based upon local contractor.
 - 5 - Cover inspections are twice per year @ 2 hours each, including travel.

FIGURE 1



LOT 460
OPERATION & MAINTENANCE PLAN

SITE LOCATION MAP

DATE: 2/25/03
FILE: 6009/24361/002.MXD

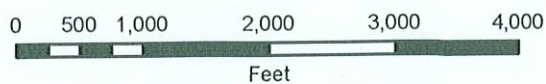
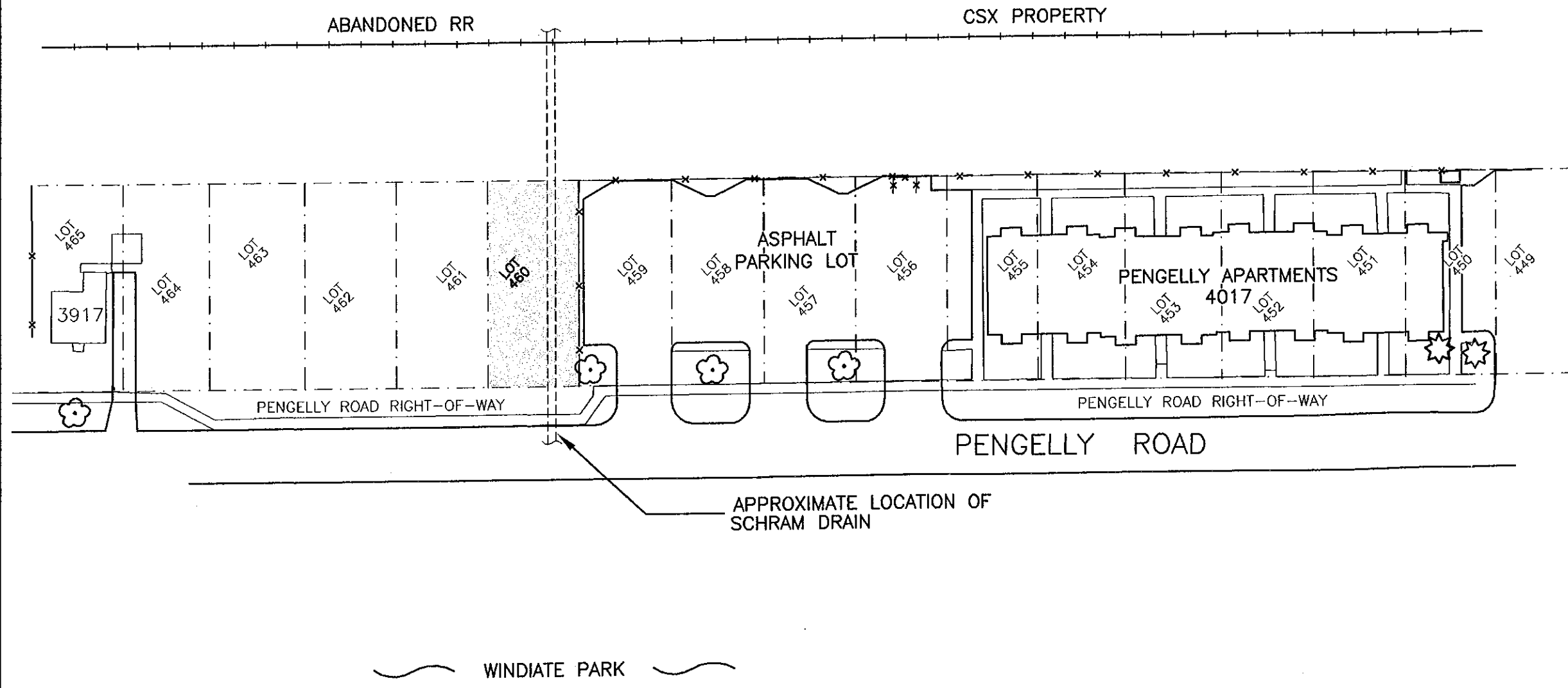


FIGURE 2



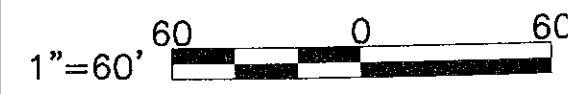
LEGEND

- ABANDONED RAILROAD TRACK
- - - - - APPROX. LOT LINES
- SITE AREA



**PENGELLY ROAD
LOT 460 O & M PLAN
FLINT, MICHIGAN**

SITE PLAN



FILE NO. 6009/24361.035



ATTACHMENT 1

Inspection Diagram

INSPECTION DIAGRAM

REALM
PENGELLY ROAD
LOT 460
FLINT, MICHIGAN

CSX PROPERTY
ABANDONED RAILROAD

TREES

APPROXIMATE PARCEL BOUNDARY

FENCE

LOT 461

LOT 460

60" STM SEWER

APARTMENT
PARKING LOT

APPROXIMATE LOCATION OF
SCHRAM DRAIN

SIDEWALK

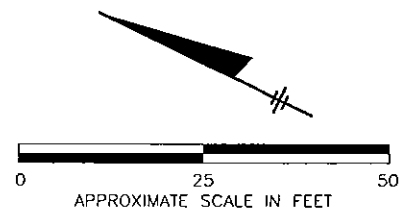
PENGELLY ROAD

INSPECTED BY: _____

INSPECTION DATE: _____



O'BRIEN & GERE
ENGINEERS, INC.



ATTACHMENT 2

**Completed Lot 460 Inspection Diagram
Sheet Number H-November 19, 2004**



O'BRIEN & GERE
ENGINEERS, INC.

November 19, 2004

Mr. Eric Van Riper
Geologist
Michigan Department of Environmental Quality
Remediation & Redevelopment Division
Constitution Hall
P.O. Box 30426
Lansing, MI 48909-7926

Re: Soil Cover Inspections
Pengelly Road Site - Lot 460
Flint, Michigan

File: 6009/24518 #2

Dear Eric:

On behalf of General Motors, O'Brien & Gere conducted a semi-annual inspection of the cover on Lot 460 at the Pengelly Road Site on November 5, 2004. As noted in the attached Inspection Diagram, there were many bare areas observed on Lot 460 with no grass cover at the surface. In accordance with the draft Operation & Maintenance (O&M) Plan for Lot 460, these bare areas will be repaired as necessary in order to maintain the integrity of the soil cover. Repairs to the cover will include reseeding and mulching, which will be performed in November 2004. Following the repairs, we will perform follow-up inspection to document post-repair conditions.

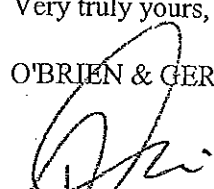
In addition, Lot 460 was mowed in June, August and September 2004 in accordance with the draft O&M Plan.

For 2005 and thereafter, O&M activities will continue on Lot 460 in accordance with the draft O&M Plan, including semi-annual inspections and mowing, and repairs as necessary to maintain the integrity of the soil cover.

Feel free to call me at 248.661.3745 if you have any questions.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.


Scott L. Cormier, P.E.
Senior Managing Engineer

Enclosure

cc: Robert Metcalf, P.E., General Motors
Fred Frank, Esq., Honigman Miller
Michael Robison, CPG, O'Brien & Gere



O'Brien & Gere Engineers, Inc., an O'Brien & Gere company
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... and offices in major U.S. cities

INSPECTION DIAGRAM

REALM
PENGELLY ROAD
LOT 460
FLINT, MICHIGAN

CSX PROPERTY
ABANDONED RAILROAD

TREES

APPROXIMATE PARCEL BOUNDARY

FENCE

LOT 461

LOT 460

APARTMENT
PARKING LOT

MANY 'BARE'
SPOTS AT SURFACE
(NO GRASS
COVER)

60" STM SEWER

APPROXIMATE LOCATION OF
SCHRAM DRAIN

SIDEWALK

PENGELLY ROAD

INSPECTED BY: MIKE ROBISON
INSPECTION DATE: 11/5/04