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MEMORANDUM

DATE: October 13, 2014

TO: Kevin Funabashi, Asst. County Counsel

FROM: Gary DiMartinis, LSRP
Brinkerhoff Environmental Services, Inc.

RE: Building Demolition/Conceptual Remediation Plans
Bergen County Properties
66 and 70 Zabriskie Street
Hackensack, NJ
Brinkerhoff Project No. 12BR051

Brinkerhoff Environmental Services, Inc. (Brinkerhoff) has prepared this memorandum to describe estimated costs associated with the demolition of the existing buildings at the above referenced Site, and to present Conceptual Remediation Plans for anticipated environmental investigation/remediation activities.

Part I of this memorandum identifies key assumptions associated with the building demolition, and summarizes the preliminary cost estimates. Part II of this memorandum identifies key assumptions, and summarizes estimated costs, associated with the environmental remediation of the Site.

PART I: KEY ASSUMPTIONS FOR BUILDING DEMOLITION

The following key assumptions apply to the building demolition plan:

- a. The building demolition is based on the building core, and assumes that buildings will be emptied of all stored items, furniture, and shelving by others.
- b. Cost estimates for asbestos investigation and abatement are provided for budgeting purposes only. A detailed pre-demolition asbestos survey has not been performed at this time.

- c. Estimated costs are provided for universal waste collection, consolidation, packaging, and disposal.
- d. Estimated costs are provided for utility disconnection.
- e. For buildings which are constructed slab on grade, the concrete slab and footings are to remain in place. (Note that this excludes the Sign/Signal Shop, for which the floor slab is to be removed to facilitate the investigation and remediation of sub-slab contamination.)

For buildings and/or areas with basements, the sub-grade concrete slab and walls are to be removed, although footings may remain in place.

Limited footing removal is anticipated in environmental remediation areas only, on an as needed basis.

- f. Large-scale removal of asphalt pavement is not included. Limited asphalt removal is anticipated in environmental remediation areas only, on an as needed basis.
- g. Estimated costs are based on removal of all existing buildings, not just those for which building demolition is a prerequisite for the proposed remedial action (e.g., excavation of floor drains/piping in garage areas).
- h. Provided costs are based on a combination of internal company data and budgetary estimates provided by New Jersey based contractors. An administrative fee has not been applied to demolition costs.
- i. Cost estimate assumes that a direct credit for steel recycling will not be provided.
- j. Concrete debris is assumed to be non-hazardous waste. Select buildings may be eligible for recycling.
- k. Costs estimates provided are preliminary for budget purposes only. It should be understood that further investigation may result in refinement of cost estimates.

A breakdown of the estimated costs for building demolition is provided as Attachment A. A summary is provided in Table 1 below.

Table 1
Building Demolition Summary
Bergen County Properties
66 and 70 Zabriskie Street
Hackensack, NJ

| Building | Preliminary Cost Estimate |
|---|----------------------------------|
| Police Department Office Building | \$284,800 |
| Road Department Main Building (Incl. Police Department Garage) | \$541,200 |
| Sign/Signal Shop and Storage Bldg. | \$226,100 |
| Salt Barn | \$117,500 |
| Warehouse #4 and #5 | \$235,200 |
| Multi-Bay Garage | \$131,700 |
| Single Family Residence | \$83,950 |
| Total: | \$1,620,450 |

**PART II: KEY ASSUMPTIONS
FOR ENVIRONMENTAL
INVESTIGATION/REMEDATION**

The following key assumptions apply to all aspects of the Conceptual Remediation Plans:

- a. Costs for utility disconnection, and building demolition are included under Part I costs for building demolition.
- b. The demolition of select buildings is prerequisite for the proposed remedial action (e.g., excavation of floor drains/piping in garage areas).
- c. Estimates are based on internal company data only and are not based on actual subcontractor quotations.
- d. Costs estimates provided are preliminary for budget purposes only. It should be understood that further investigation may result in refinement of remedial strategies and cost estimates.

Additional details are provided on the Conceptual Remediation Plan Summaries included as Attachments B, C, D, E, and F. A summary of the cost estimates is provided in Table 2 below.

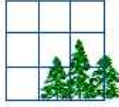
Table 2
Conceptual Remediation Plan Summary
Bergen County Properties
66 and 70 Zabriskie Street
Hackensack, NJ

| Area of Concern (AOC) | Preliminary Cost Estimate |
|---|----------------------------------|
| AOC-1 Police Department Tank Field | \$580,000 |
| AOC-3 Road Department Tank Field | \$497,000 |
| Tar Buckets/Historical Disposal Area (Open Area C) | \$732,500 |
| Floor Drains, Hydraulic Lifts, and Minor AOCs | \$440,000 |
| Sign/Signal Shop (Tar Building) | \$131,000 |
| Total: | \$2,380,500 |

ATTACHMENT A
Building Demolition Cost Estimate
Bergen County Properties
66 70 Zabriskie Street
Hackensack, New Jersey

| Task / Building | Police Department Office Building | Road Dept. Main Building and Police Dept. Garage | Sign/Signal Shop and Storage Bldg. | Salt Barn | Warehouse #4 and #5 | Multi-Bay Garage | Single Family Residence |
|--|--|---|---|------------------|----------------------------|-------------------------|--------------------------------|
| Asbestos Survey | \$10,000 | \$10,000 | \$7,500 | \$1,000 | \$1,000 | \$1,000 | \$2,500 |
| Asbestos Abatement (Budget) | \$75,000 | \$75,000 | \$50,000 | \$10,000 | \$10,000 | \$10,000 | \$20,000 |
| Pre-Demo Tasks, incl. Utility Disconnects | \$15,500 | \$24,500 | \$24,500 | \$7,500 | \$7,500 | \$7,500 | \$7,500 |
| Universal Waste Collection | \$4,800 | \$7,200 | \$4,200 | \$1,000 | \$3,200 | \$1,200 | \$1,200 |
| Universal Waste Disposal | \$3,500 | \$3,500 | \$3,500 | \$1,000 | \$3,500 | \$2,500 | \$1,500 |
| Building Demolition | \$30,000 | \$60,000 | \$42,000 | \$20,000 | \$30,000 | \$15,000 | \$12,000 |
| Concrete Sampling | \$5,000 | \$5,000 | \$5,000 | \$3,000 | \$2,000 | \$1,500 | \$1,000 |
| Concrete Load Out | \$4,500 | \$4,500 | \$4,500 | \$4,500 | \$3,500 | \$4,500 | \$3,500 |
| Transportation and Disposal of C/D debris* | \$129,000 | \$344,000 | \$77,400 | \$64,500 | \$172,000 | \$86,000 | \$32,250 |
| Demolition Oversight | \$7,500 | \$7,500 | \$7,500 | \$5,000 | \$2,500 | \$2,500 | \$2,500 |
| Totals | \$284,800 | \$541,200 | \$226,100 | \$117,500 | \$235,200 | \$131,700 | \$83,950 |

* Construction and demolition debris disposal estimated at \$215.00 per ton (includes tax, fees, and surcharges)



**ATTACHMENT B
CONCEPTUAL REMEDIATION PLAN
OCTOBER 2014**

**AOC-1 Police Department Tank Field
Bergen County Properties
66 and 70 Zabriskie Street
City of Hackensack, Bergen County, New Jersey**

NJDEP Preferred Interest No. 011685

This Conceptual Remediation Plan is based on the aggressive excavation of impacted soils, combined with a relatively small scale in-situ treatment program if deemed necessary.

KEY ASSUMPTIONS

Excavation of Impacted Soil -

- The proposed excavation area is roughly 14,400 square feet.
- Excavation to be performed within the Subject Property only.
- The 0 to 4 foot depth interval (approximate) to be used as backfill.
- Impacted soil to be removed from an estimated six foot vertical depth interval.
- Impacted soil quantity is estimated at 4,160 tons.
- Groundwater encountered during excavation to be disposed off-site (estimated 40,000 gallons).
- Cost estimates provided are preliminary for budget purposes only.

In-Situ Remediation –

- In-situ treatment limited to Kinderkamack Road edge of the property, with incidental treatment of recalcitrant areas.
- Treatment is not needed within, or on the northern/western side of the Kinderkamack Road right-of-way.
- Treatment based on hydrogen peroxide injection or similar aggressive method.
- Monitored Natural Attenuation program will likely be required.
- Preliminary cost provided is rough budget proportional to the area to be treated.
- Cost estimate provided is preliminary for budget purposes only.

**PRELIMINARY COST ESTIMATE
AOC-1 Police Department Tank Field**

| Description | Estimated Cost* |
|---|------------------|
| <i>Excavation/Disposal of Impacted Soils</i> | |
| Excavation Equipment/Crew (7 days @ \$6,000/day) | \$42,000 |
| Impacted Soil Transportation and Disposal (4,160 tons at \$50/ton) | \$208,000 |
| Supply Backfill (4,160 tons at \$25/ton) | \$104,000 |
| <i>Groundwater Collection and Disposal</i> | |
| Frac Tanks, Pumps, etc. | \$6,000 |
| Transportation and Disposal of Impacted Groundwater (40,000 gallons at \$0.50/gallon) | \$20,000 |
| <i>In-Situ Treatment</i> | |
| In-Situ Treatment – Budget | \$100,000 |
| <i>Environmental/Regulatory Management and Sampling</i> | |
| Environmental/Regulatory Management - Budget | \$100,000 |
| Total Cost (AOC-1): | \$580,000 |

* All estimates are based on internal company data and are not based on actual subcontractor quotations.

**ATTACHMENT C
CONCEPTUAL REMEDIATION PLAN
OCTOBER 2014**

**AOC-3 Road Department Tank Field
Bergen County Properties
66 and 70 Zabriskie Street
City of Hackensack, Bergen County, New Jersey**

NJDEP Preferred Interest No. 011685

This Conceptual Remediation Plan is based on the aggressive excavation of impacted soils, along with Monitored Natural Attenuation of groundwater. No in-situ treatment is deemed necessary.

KEY ASSUMPTIONS

Excavation of Impacted Soil -

- The proposed excavation area is roughly 14,400 square feet.
- Excavation to be performed within the Subject Property only.
- The 0 to 4 foot depth interval (approximate) to be used as backfill.
- Impacted soil to be removed from an estimated six foot vertical depth interval.
- Impacted soil quantity is estimated at 4,160 tons.
- Groundwater encountered during excavation to be disposed off-site (estimated 70,000 gallons).
- Cost estimates provided are preliminary for budget purposes only.

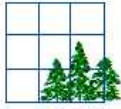
In-Situ Remediation –

- In-situ treatment is not deemed necessary.
- Monitored Natural Attenuation program will likely be required.
- Cost estimate provided is preliminary for budget purposes only.

**PRELIMINARY COST ESTIMATE
AOC-3 Road Department Tank Field**

| Description | Estimated Cost* |
|---|------------------|
| <i>Excavation/Disposal of Impacted Soils</i> | |
| Excavation Equipment/Crew (7 days @ \$6,000/day) | \$42,000 |
| Impacted Soil Transportation and Disposal (4,160 tons at \$50/ton) | \$208,000 |
| Supply Backfill (4,160 tons at \$25/ton) | \$104,000 |
| <i>Groundwater Collection and Disposal</i> | |
| Frac Tanks, Pumps, etc. | \$8,000 |
| Transportation and Disposal of Impacted Groundwater (70,000 gallons at \$0.50/gallon) | \$35,000 |
| <i>In-Situ Treatment</i> | |
| In-Situ Treatment – Budget [Not Applicable] | N/A |
| <i>Environmental/Regulatory Management and Sampling</i> | |
| Environmental/Regulatory Management - Budget | \$100,000 |
| Total Cost (AOC-3): | \$497,000 |

* All estimates are based on internal company data and are not based on actual subcontractor quotations.



**ATTACHMENT D
CONCEPTUAL REMEDIATION PLAN
OCTOBER 2014**

**Tar Buckets/Historical Disposal Area (Open Area C)
Bergen County Properties
66 and 70 Zabriskie Street
City of Hackensack, Bergen County, New Jersey**

NJDEP Preferred Interest No. 011685

This Conceptual Remediation Plan is based on the excavation of tar buckets and tar-impacted soils throughout the disposal area.

KEY ASSUMPTIONS

Excavation of Impacted Soil -

- The proposed excavation area is roughly 57,900 square feet.
- Excavation to be performed within the Subject Property only.
- Non-impacted soil is to be stockpiled, sampled, and reused as backfill.
- Impacted soil to be removed from an estimated two foot vertical depth interval.
- Impacted soil quantity is estimated at 5,585 tons. Due to the presence of debris, a higher per ton disposal rate is anticipated.
- Groundwater is not expected to be encountered during excavation activities.
- Cost estimates provided are preliminary for budget purposes only.

In-Situ Remediation –

- In-situ treatment, and/or Monitored Natural Attenuation are not deemed necessary, as groundwater contamination is not expected in connection with this AOC.

NOTE: The Conceptual Remediation Plan as presented is based on the excavation and removal of the tar buckets and tar layers encountered. Consultation with the NJDEP is recommended regarding the extent of remediation required. With the clarification and consent of the NJDEP, it may be possible to use a cap (engineering control) and Deed Notice to address this AOC, in lieu of excavation and off-site disposal. This would result in considerable cost savings.

PRELIMINARY COST ESTIMATE
Tar Buckets/Historical Disposal Area (Open Area C)

| Description | Estimated Cost* |
|--|------------------|
| <i>Excavation/Disposal of Impacted Soils</i> | |
| Excavation Equipment/Crew (15 days @ \$7,500/day) | \$112,500 |
| Impacted Soil Transportation and Disposal (5,600 tons at \$75/ton) | \$420,000 |
| Supply Backfill (5,600 tons at \$25/ton) | \$140,000 |
| <i>Groundwater Collection and Disposal</i> | |
| Frac Tanks, Pumps, etc. [Not Applicable] | N/A |
| Transportation and Disposal of Impacted Groundwater [Not Applicable] | N/A |
| <i>In-Situ Treatment</i> | |
| In-Situ Treatment – Budget [Not Applicable] | N/A |
| <i>Environmental/Regulatory Management and Sampling</i> | |
| Environmental/Regulatory Management - Budget | \$60,000 |
| Total Cost (Open Area C): | \$732,500 |

* All estimates are based on internal company data and are not based on actual subcontractor quotations.

**ATTACHMENT E
CONCEPTUAL REMEDIATION PLAN
OCTOBER 2014**

**Floor Drains, Hydraulic Lifts, and Minor AOCs
Bergen County Properties
66 and 70 Zabriskie Street
City of Hackensack, Bergen County, New Jersey**

NJDEP Preferred Interest No. 011685

This Conceptual Remediation Plan addresses several AOCs and potential AOCs, as described below:

- Excavation and removal of floor drains/piping in the Vehicle Maintenance Garages. It is assumed that impacted soil encountered would be excavated for off-site disposal.
- Excavation and removal of hydraulic lifts within the Vehicle Maintenance Garages, and/or evaluation of former lift areas. It is assumed that impacted soil encountered would be excavated for off-site disposal.
- Evaluation of Potential AOCs: railroad spur track, hazardous material storage areas, loading areas, and the potential presence of historic fill. It is assumed that impacted soil encountered would either be removed by excavation or included in a capping plan with Deed Notice.
- Evaluation of Minor AOCs, such as former USTs which are reflected in the NJDEP file records as having minimal contamination. It is assumed that these areas will be investigated to confirm whether they should be closed out, or whether additional corrective action is necessary.

KEY ASSUMPTIONS

- The scope of work may be less certain for these items, thus only broad-based budgets are practical at this time.
- It is assumed that corrective actions could be readily performed upon demolition of the buildings, or as part of the redevelopment if capping is desired as an Engineering Control.
- Cost estimates provided are preliminary for budget purposes only. A Contingency Budget is also included to address unexpected results.

PRELIMINARY COST ESTIMATE
Floor Drains, Hydraulic Lifts, and Minor AOCs

| Description | Estimated Cost* |
|---|------------------|
| <i>Excavation and Removal of Floor Drains/Piping</i> | |
| Budget | \$80,000 |
| <i>Excavation and Removal of Hydraulic Lifts</i> | |
| Budget | \$100,000 |
| <i>Evaluation of Potential AOCs (RR Spur, and others)</i> | |
| Budget | \$100,000 |
| <i>Evaluation of Minor AOCs</i> | |
| Budget | \$60,000 |
| <i>Contingency</i> | |
| Budget | \$100,000 |
| Total Cost: | \$440,000 |

*All estimates are based on internal company data and are not based on actual subcontractor quotations.

**ATTACHMENT F
CONCEPTUAL REMEDIATION PLAN
OCTOBER 2014**

**Sign/Signal Shop (Tar Building)
Bergen County Properties
66 and 70 Zabriskie Street
City of Hackensack, Bergen County, New Jersey**

NJDEP Preferred Interest No. 011685

This Conceptual Remediation Plan is based on the excavation of the base of the Sign/Signal Shop Building where contamination and remnants of former operations (i.e., piping) are suspected.

KEY ASSUMPTIONS

Excavation of Impacted Soil -

- The proposed excavation area is within the footprint of the building. Demolition of the building is required to access the area beneath the existing floor.
- Non-impacted soil is to be stockpiled, sampled, and reused as backfill.
- Impacted soil to be removed as needed.
- Groundwater may be encountered during excavation activities.
- Cost estimates provided are preliminary for budget purposes only.

In-Situ Remediation –

- In-situ treatment, and/or Monitored Natural Attenuation are not deemed necessary, as only minor groundwater contamination is expected in connection with this AOC.

**PRELIMINARY COST ESTIMATE
Sign/Signal Shop (Tar Building)**

| Description | Estimated Cost* |
|--|------------------|
| <i>Excavation/Disposal of Impacted Soils</i> | |
| Excavation Equipment/Crew (5 days @ \$6,000/day) | \$30,000 |
| Impacted Soil Transportation and Disposal (As Needed, Budget) | \$40,000 |
| Disposal of Segregated Materials (contaminated piping, debris, etc.) | \$15,000 |
| <i>Groundwater Collection and Disposal</i> | |
| Frac Tanks, Pumps, etc. [Not Applicable] | N/A |
| Transportation and Disposal of Impacted Groundwater [Not Applicable] | N/A |
| <i>In-Situ Treatment</i> | |
| In-Situ Treatment – Budget [Not Applicable] | N/A |
| <i>Environmental/Regulatory Management and Sampling</i> | |
| Environmental/Regulatory Management - Budget | \$46,000 |
| Total Cost: | \$131,000 |

*All estimates are based on internal company data and are not based on actual subcontractor quotations.