file

Stoller
Fernald Office

established 1959

Task Order ST07-110
Control Number 1000-T07-1149

July 10, 2007

Ms. Jane Powell
Office of Legacy Management
U. S. Department of Energy
11003 Hamilton-Cleves Hwy.
Harrison, Ohio 45030

Dear Ms. Powell:

SUBJECT: Contract No. DE-AC01-02GJ79491, Stoller
Task Order Number ST07-110, LM Fernald LTS&M
Transmittal of the Revised 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve

Reference: Letter, F. Johnston to J. Powell, "Transmittal of the 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve," dated June 13, 2007

Enclosed is the Revised 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve. This document was originally submitted in June with the referenced letter. However, Table 2 was inadvertently omitted from the submittal. This revised submittal now includes Table 2. No other changes to the report or table were made.

Upon your concurrence, please forward to the Ohio Environmental Protection Agency and the Natural Resource Trustees. A draft transmittal letter is attached. If you have any questions or require additional information, please contact John Homer at (513) 648-7519.

Sincerely,

Frank Johnston
Fernald Site Project Manager

FLJ/JH/dsm

Enclosure

cc: <u>With enclosure</u>
J. Homer, Stoller
J. Reising, DOE-EM
E. Skintik, DOE-EMCBC
S. Walpole, Stoller
AR Coordinator (Thru W. Sumner - (2 copies)
Project File FER 115.02.10(A) (Thru W. Sumner)

<u>Without enclosure</u>
Correspondence Control File (Thru C. Weston)
Administrative File (Thru D. Metzler)

Department of Energy
Office of Legacy Management

July , 2007

DRAFT

Mr. Thomas Schneider, Project Manager
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

Mr. Dave Devault
United States Fish and Wildlife Service
Regional Office – Federal Building
Fort Snelling, Minnesota 55111

Mr. Johnny Reising, Director
U.S. Department of Energy
10995 Hamilton-Cleves Highway
Harrison, OH 45030

Dear Mr. Schneider, Mr. Devault, and Mr. Reising:

SUBJECT: **Transmittal of the Revised 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve**

Reference: Letter, J. Powell to T. Schneider, D. Duvalt, and J. Reising, "Transmittal of the 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve," dated June 14, 2007

This letter transmits the Revised 2006 Consolidated Monitoring Report for Restored Areas at the Fernald Preserve. This document was originally submitted in June with the referenced letter. However, Table 2 was inadvertently omitted from the submittal. This revised submittal now includes Table 2. No other changes to the report or table were made.

If you have any questions regarding this matter, please call me at 513-648-3148.

Sincerely,

Jane Powell,
Fernald Site Manager
DOE-LM-20.1

Enclosure

DRAFT

cc: w/ enclosure:
M. Cullerton, Tetra Tech
S. Helmer, ODH
G. Jablonowski, USEPA-V, SR-6J
M. Murphy, USEPA-V, A-18J
J. Saric, USEPA-V, SR-5J
T. Schneider, OEPA (3 copies of enclosure)
Project Record File FER 115.02.10(A) (thru W. Sumner)

cc w/o enclosure:
J. Homer, Stoller
F. Johnston, Stoller

ENCLOSURE

2006 CONSOLIDATED MONITORING REPORT FOR RESTORED AREAS AT THE FERNALD PRESERVE NARRATIVE SUMMARY
June 2007

The attached tables present the data collected in 2006 for Implementation monitoring of restored areas at the Fernald Preserve. Implementation monitoring included vegetation survival and herbaceous cover within Paddys Run West, Paddys Run East, and Sub-Areas 1, 2 and 8 of the Borrow Area. Water quality data were also collected for the Phase II Wetland Mitigation Project and Sub-Area 8 of the Borrow Area.

Site precipitation data for 2006 are presented in Table 1. Monthly precipitation was below average for much of the spring and summer. As a result, restoration personnel used a combination of water tanks, water trucks and water cannons to irrigate planted and seeded areas.

Implementation Monitoring

Vegetation survival for Paddys Run West, Paddys Run East and the Borrow Area is presented in Table 2. All vegetation planted across the project area was surveyed pursuant to the methodology established in the 2002 Consolidated Monitoring Report (DOE 2003). Field survival was over 80 percent overall and for each of the individual areas except for the Aesthetic Barrier. Increased use of deer exclosure fencing continues to prove very beneficial. Most mortality observed was not due to deer, but rather to small mammals that girdled the base of sapling trees. This appears to be the reason for the increased mortality in the vicinity of the Aesthetic Barrier.

The herbaceous cover summary for Paddys Run West, Paddys Run East and a portion of the Borrow Area is presented in Table 3. Area-specific data tables are provided in Tables 3A through 3H. Again, the methodology established in the 2002 Consolidated Monitoring Report was used to collect field data. At least three random quadrats were sampled in each area. Cover in all areas is generally well established, as most quadrats sampled had greater than 90 percent total cover. Also, most native herbaceous species composition and relative frequency of native species calculations were greater than 50 percent. Table 3H demonstrates that native species establishment has been difficult in a portion of the Borrow Area. This area was seeded with a wet prairie mix, and the wetland basins and swales located within this Sub-Area appear to have a diverse assemblage of wetland vegetation. However, the hydrology of this area may be such that wet areas are limited to the constructed basins instead of the Sub-Area footprint. As a result, the seeded wetland vegetation is out-competed by upland weeds. This area will be re-evaluated in 2007 to determine if any additional actions are necessary to increase native species composition and frequency.

Water quality data were collected in each basin of the Phase II Wetland Mitigation Project (Area 6, Phase I) and in Sub-Area 8 of the Borrow Area (Table 4). The water quality findings appeared within normal ranges, with the exception of pH in several basins. Also, increased turbidity was observed in the Borrow Area. Since the sample was collected in the fall, this basin may have been affected by grading activities in adjacent Sub-Areas 5 and 6. Additional water quality sampling will be conducted in 2007 to investigate turbidity and determine whether the pH values are a trend or an outlier.

Activities in 2007

The Final Legacy Management and Institutional Controls Plan (LMICP, DOE 2006) identifies the specific monitoring requirements for restored areas. Projects that will be monitored include the Former Production Area, the Waste Pits Area, and the Silos Area. In addition, wetland mitigation monitoring will continue for the Phase II Wetland Mitigation Project and the Borrow Area. Herbaceous cover of the Onsite Disposal Facility Cell 2 will be collected as well. Per the LMICP, this data will be provided as a separate report.

References:

U.S. Department of Energy, 2006, "Comprehensive Legacy Management and Institutional Controls Plan", Final, June.

U.S. Department of Energy, 2003, "2002 Consolidated Monitoring Report for Restored Areas at the Fernald Closure Project," 20900-RP-0017 Rev. B.

Table 1
2006 Consolidated Monitoring Report
2006 Precipitation Data

Month	Average Site Precipitation (in.)	Actual Site Precipitation (in.)	Monthly Departure from Average (in.)	Cumulative Departure from Average (in.)	Palmer Drought Severity Index
January	3.14	3.43	0.29	0.29	Mid-Range
February	2.80	1.35	-1.45	-1.16	Mid-Range
March	3.90	4.84	0.94	-0.22	Mid-Range
April	3.80	6.54	2.74	2.52	Mid-Range
May	4.23	2.78	-1.45	1.07	Mid-Range
June	4.06	2.29	-1.77	-0.70	Mid-Range
July	4.03	2.86	-1.17	-1.87	Mid-Range
August	3.20	2.28	-0.92	-2.79	Mid-Range
September	2.79	4.77	1.98	-0.81	Mid-Range
October	2.68	3.86	1.18	0.37	Very Moist
November	3.33	4.03	0.70	1.07	Moderately Moist
December	3.12	3.17	0.05	1.12	Moderately Moist

Palmer Drought Severity Index source:
http://lwf.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html

Table 2
2006 Consolidated Monitoring Report
Woody Vegetation Survival

Area	Planted	Vitality	Resprout	Dead	Percent Survival
Paddys Run West - Area 8, Phase III North	1,674	1	1	53	96.7%
Paddys Run West - Area 8, Phase III South	2,556	11	14	90	95.5%
Paddys Run East - South Pines	2,150	2	0	59	97.2%
Paddys Run East - Area 2, Phase II	1,353	55	5	173	82.8%
Paddys Run East - Area 2, Phase III	2,412	47	17	117	92.5%
Borrow Area - Phase 1	747	0	0	146	80.5%
Borrow Area - Savanna	100	1	0	13	86.0%
Borrow Area - Aesthetic Barrier	295	2	0	84	70.8%

Table 3
2006 Consolidated Monitoring Report
Herbaceous Cover Summary

Area	Average Cover Class	Native Species Composition	Native Relative Frequency
Paddys Run West - Area 8, Phase III North Prairie	6	56%	69%
Paddys Run West - Sub Station Prairie	6	50%	61%
Paddys Run West - Willey Road Prairie	6	67%	65%
Paddys Run East - South Pines	5.67	57%	64%
Paddys Run East - Area 2, Phase II	5.67	67%	75%
Paddys Run East - Area 2, Phase III	5.67	39%	38%
Borrow Area - Sub Areas 1 and 2	5	43%	50%
Borrow Area - Sub Area 8	6	19%	19%

Cover Class: 0 = 0% 1 = 2-4% 2 = 5-24% 3 = 25-49% 4 = 50-74% 5 = 75-89% 6 = 90-100%

Table 3A
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run West - Area 8, Phase III North Prairie

Native Spp.:	15
Non-Native Spp.:	12
Percent Native:	56%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Andropogon gerardii	big blue stem	grass	5	1.00	10%
Asclepias tuberosa	butterfly weed	forb	4	0.60	6%
Aster pilosus	old field aster	forb	1	0.20	2%
Bidens cernua	nodding beggar's tick	forb	3	0.20	2%
Bouteloua curtipendula	side oats grama	grass	8	0.60	6%
Conyza canadensis	horseweed	forb	0	0.20	2%
Echinacea purpurea	purple coneflower	forb	6	0.80	8%
Heliopsis helianthoides	false sunflower	forb	5	0.60	6%
Juncus tenuis	poverty rush	rush	1	0.20	2%
Monarda fistulosa	bergamot	forb	3	0.20	2%
Panicum virgatum	switchgrass	grass	4	0.60	6%
Rudbeckia hirta	black eyed Susan	forb	1	0.80	8%
Schizachyrium scoparium	little bluestem	grass	5	0.20	2%
Sorghastrum nutans	Indian grass	grass	5	0.40	4%
Vernonia gigantea	tall iron weed	forb	2	0.20	2%
Cirsium arvense	**Canada thistle**	**forb**	**0**	0.20	2%
Echinochloa crusgalli	**barnyard grass**	**grass**	**0**	0.20	2%
Glechoma hederacea	**ground ivy**	**forb**	**0**	0.20	2%
Medicago lupulina	**black medick**	**forb**	**0**	0.20	2%
na	**Re-green**	**grass**	**0**	0.20	2%
Plantago lanceolata	**English plantain**	**forb**	**0**	0.40	4%
Polygynum persicaria	**spotted ladies thumb**	**forb**	**0**	0.20	2%
Setaria glauca	**yellow foxtail**	**grass**	**0**	0.20	2%
Solanum carolinense	**horsenettle**	**forb**	**0**	0.20	2%
Taraxacum officinale	**dandelion**	**forb**	**0**	0.20	2%
Trifolium pratense	**red clover**	**forb**	**0**	0.20	2%
Trifolium repens	**white clover**	**forb**	**0**	0.60	6%
			Native Species:	6.8	69%
			Non-Native Species:	3	31%

CC = Coefficient of Conservatism

Table 3B
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run West - Sub Station Prairie

Native Spp.:	6
Non-Native Spp.:	6
Percent Native:	50%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Acer negundo	box elder seedling	tree	3	0.67	11%
Acer rubrum	red maple seedling	tree	2	0.33	6%
Achillia millefolium	yarrow	forb	1	0.33	6%
Elymus canadensis	Canada wild rye	grass	6	1.00	17%
Solidago canadensis	Canada goldenrod	forb	1	0.67	11%
Vernonia gigantea	tall iron weed	forb	2	0.67	11%
Chicorium intybus	**chickory**	**forb**	**0**	0.33	6%
Fescue sp.	**fescue sp.**	**grass**	**0**	0.33	6%
Glechoma hederacea	**ground ivy**	**forb**	**0**	0.67	11%
Plantogo major	**common plantain**	**forb**	**0**	0.33	6%
Solanum carolinense	**horsenettle**	**forb**	**0**	0.33	6%
Stellaria media	**common chickweed**	**forb**	**0**	0.33	6%
			Native Species:	3.67	61%
			Non-Native Species:	2.33	39%

CC = Coefficient of Conservatism

Table 3C
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run West - Willey Road Prairie

Native Spp.:	10
Non-Native Spp.:	5
Percent Native:	67%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Achillia millefolium	yarrow	forb	1	0.33	5%
Asclepias tuberosa	butterfly weed	forb	4	0.33	5%
Erigeron annuus	daisy fleabane	forb	0	0.67	10%
Monarda fistulosa	bergamot	forb	3	0.33	5%
Muhlenbergia schreberi	nimblewill	grass	0	0.33	5%
Prunella vulgaris	heal-all	forb	0	0.33	5%
Rudbeckia hirta	black eyed susan	forb	1	0.33	5%
Solidago canadensis	Canada goldenrod	forb	1	0.67	10%
Sorghastrum nutans	Indian grass	grass	5	0.33	5%
Vernonia gigantea	tall iron weed	forb	2	0.67	10%
Cichorium intybus	**chickory**	**forb**	**0**	0.33	5%
Daucus carota	**Queen Anne's lace**	**forb**	**0**	1.00	15%
Fescue sp.	**fescue sp.**	**grass**	**0**	0.67	10%
Plantago lanceolata	**english plantain**	**forb**	**0**	0.33	5%
Poa sp.	**bluegrass sp.**	**grass**	**0**	0.33	5%
			Native Species:	4.33	65%
			Non-Native Species:	2.67	40%

CC = Coefficient of Conservatism

Table 3D
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run East - South Pines

Native Spp.:	12
Non-Native Spp.:	9
Percent Native:	57%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisifolia	common ragweed	forb	0	1.00	11%
Andropogon gerardii	big blue stem	grass	5	0.67	7%
Aster novae-angliae	New England aster	forb	2	0.33	4%
Aster pilosus	old field aster	forb	1	0.33	4%
Bidens frondosa	devil's beggar's-tick	forb	2	0.67	7%
Calystegia sepium	hedge bindweed	forb	1	0.33	4%
Euthamia graminifolia	flat-topped goldenrod	forb	2	0.33	4%
Panicum virgatum	switchgrass	grass	4	0.67	7%
Platanus occidentatlis	sycamore seedling	tree	7	0.33	4%
Polygynum hydropiper	water pepper	forb	1	0.33	4%
Sorghastrum nutans	Indian grass	grass	5	0.67	7%
Ulmus sp.	elm seedling	tree	2	0.33	4%
Cirsium arvense	**Canada thistle**	**forb**	**0**	0.33	4%
Daucus carota	**Queen Anne's lace**	**forb**	**0**	0.67	7%
Echinochloa crusgalli	**barnyard grass**	**grass**	**0**	0.33	4%
Medicago lupulina	**black medick**	**forb**	**0**	0.33	4%
na	**Re-green**	**grass**	**0**	0.33	4%
Polygynum aviculare	**common knotweed**	**forb**	**0**	0.33	4%
Setaria glauca	**yellow foxtail**	**grass**	**0**	0.33	4%
Sorghum halepense	**Johnson grass**	**grass**	**0**	0.33	4%
Trifolium repens	**white clover**	**forb**	**0**	0.33	4%
			Native Species:	6.00	64%
			Non-Native Species:	3.33	36%

CC = Coefficient of Conservatism

Table 3E
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run East - Area 2, Phase II

Native Spp.:	6
Non-Native Spp.:	3
Percent Native:	67%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Acer negundo	Box elder seedling	tree	3	0.33	8%
Andropogon gerardii	big blue stem	grass	5	0.67	17%
Desmodium canadense	Canada tick trefoil	forb	4	0.67	17%
Panicum virgatum	switchgrass	grass	4	0.67	17%
Sorghastrum nutans	Indian grass	grass	5	0.33	8%
Ulmus sp.	elm seedling	tree	2	0.33	8%
Cirsium arvense	**Canada thistle**	**forb**	**0**	0.33	8%
Plantago lanceolata	**English plantain**	**forb**	**0**	0.33	8%
Trifolium repens	**white clover**	**forb**	**0**	0.33	8%
			Native Species:	3.00	75%
			Non-Native Species:	1.00	25%

CC = Coefficient of Conservatism

Table 3F
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Paddys Run East - Area 2, Phase III

Native Spp.:	11
Non-Native Spp.:	17
Percent Native:	39%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisifolia	common ragweed	forb	0	1.00	8%
Asclepias tuberosa	butterfly weed	forb	4	0.33	3%
Aster pilosus	old field aster	forb	1	0.67	5%
Erigeron annuus	daisy fleabane	forb	0	0.33	3%
Monarda fistulosa	bergamot	forb	3	0.33	3%
Oxalis stricta	yellow wood sorrel	forb	0	0.33	3%
Panicum virgatum	switchgrass	grass	4	0.33	3%
Plantago rugelli	Rugell's plantain	forb	0	0.67	5%
Polygynum hydropiper	water pepper	forb	1	0.33	3%
Rudbeckia hirta	black eyed susan	forb	1	0.33	3%
Vernonia gigantea	tall iron weed	forb	2	0.33	3%
Cirsium arvense	**Canada thistle**	**forb**	**0**	0.33	3%
Cirsium vulgare	**bull thistle**	**forb**	**0**	0.33	3%
Daucus carota	**Queen Anne's lace**	**forb**	**0**	1.00	8%
Echinochloa crusgalli	**barnyard grass**	**grass**	**0**	0.67	5%
Fescue sp.	**fescue sp.**	**grass**	**0**	0.33	3%
Glechoma hederacea	**ground ivy**	**forb**	**0**	0.33	3%
Medicago lupulina	**black medick**	**forb**	**0**	0.33	3%
Plantago lanceolata	**English plantain**	**forb**	**0**	0.67	5%
Ploygynum cespitosum	**long-bristled smartweed**	**forb**	**0**	0.33	3%
Polygynum persicaria	**spotted lady's thumb**	**forb**	**0**	0.33	3%
Senecio glabellus	**butterweed**	**forb**	**0**	0.67	5%
Setaria glauca	**yellow foxtail**	**grass**	**0**	0.33	3%
Solanum carolinense	**horsenettle**	**forb**	**0**	0.33	3%
Sorghum halepense	**Johnson grass**	**grass**	**0**	0.33	3%
Taraxacum officinale	**dandelion**	**forb**	**0**	0.33	3%
Trifolium pratense	**red clover**	**forb**	**0**	0.67	5%
Trifolium repens	**white clover**	**forb**	**0**	0.67	5%
			Native Species:	5.00	38%
			Non-Native Species:	8.00	62%

CC = Coefficient of Conservatism

Table 3G
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Borrow Area - Sub Areas 1 and 2

Native Spp.:	9
Non-Native Spp.:	12
Percent Native:	43%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisifolia	common ragweed	forb	0	0.67	7%
Aster pilosus	old field aster	forb	1	0.33	3%
Conyza canadensis	horseweed	forb	0	0.33	3%
Eupatorium serotinum	late-flowering boneset	forb	2	0.33	3%
Euphorbia maculata	spotted spurge	forb	0	0.67	7%
Fragaria virginiana	wild strawberry	forb	1	0.67	7%
Panicum virgatum	switchgrass	grass	4	1.00	10%
Spartina pectinata	prairie cordgrass	grass	5	0.67	7%
Verbena hastata	blue vervain	forb	4	0.33	3%
Chenopodium album	**lambs quarters**	**forb**	**0**	0.33	3%
Medicago lupulina	**black medick**	**forb**	**0**	0.33	3%
Plantago lanceolata	**English plantain**	**forb**	**0**	0.67	7%
Polygynum persicaria	**spotted ladies thumb**	**forb**	**0**	0.33	3%
Rumex crispus	**curly dock**	**forb**	**0**	0.67	7%
Senecio glabellus	**butterweed**	**forb**	**0**	0.33	3%
Setaria glauca	**yellow foxtail**	**grass**	**0**	0.33	3%
Sida spinosa	**prickly mallow**	**forb**	**0**	0.67	7%
Solanum carolinense	**horsenettle**	**forb**	**0**	0.33	3%
Trifolium pratense	**red clover**	**forb**	**0**	0.33	3%
Trifolium repens	**white clover**	**forb**	**0**	0.33	3%
Xanthium strumarium	**cocklebur**	**forb**	**0**	0.33	3%
			Native Species:	5.00	50%
			Non-Native Species:	5.00	50%

CC = Coefficient of Conservatism

Table 3H
2006 Consolidated Monitoring Report
Herbaceous Cover Data Summary
Borrow Area - Sub Area 8

Native Spp.:	3
Non-Native Spp.:	13
Percent Native:	19%

(non native species are in bold)

Species	Common Name	Type	CC	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisifolia	common ragweed	forb	0	0.33	4%
Conyza canadensis	horseweed	forb	0	0.67	8%
Elymus virginicus	Virginia wild rye	grass	3	0.67	8%
Acalypha rhomboidea	**three-seeded mercury**	**forb**	**0**	1.00	12%
Chenopodium album	**lambs quarters**	**forb**	**0**	0.67	8%
Daucus carota	**Queen Anne's lace**	**forb**	**0**	1.00	12%
Echinochloa crusgalli	**barnyard grass**	**grass**	**0**	0.67	8%
Medicago lupulina	**black medick**	**forb**	**0**	0.33	4%
Phleum pratense	**Timothy**	**grass**	**0**	0.67	8%
Plantogo major	**common plantain**	**forb**	**0**	0.67	8%
Polygynum persicaria	**spotted lady's thumb**	**forb**	**0**	0.33	4%
Rumex crispus	**curly dock**	**forb**	**0**	0.33	4%
Senecio glabellus	**butterweed**	**forb**	**0**	0.33	4%
Trifolium pratense	**red clover**	**forb**	**0**	0.33	4%
Trifolium repens	**white clover**	**forb**	**0**	0.33	4%
Verbascum thapsus	**common mullein**	**forb**	**0**	0.33	4%
			Native Species:	1.67	19%
			Non-Native Species:	7.00	81%

CC = Coefficient of Conservatism

Table 4
2006 Consolidated Monitoring Report
Wetland Mitigation Water Quality Summary

Area	Temperature (celsius)	pH	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Color
Area 6, Phase I - Basin 1	26.5	8.52	0.373	40	10.3	clear
Area 6, Phase I - Basin 2	26.3	8.44	0.391	6	9.4	clear
Area 6, Phase I - Basin 3	30.6	9.28	0.337	15	14.17	clear
Borrow Area - Sub Area 8	27.7	9.43	0.378	100	15.51	slightly cloudy